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THE ESTABLISHMENT OF A SATISFACTORY VETERINARY PUBLIC HEALTH SERVICE*

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It is noticeable that the addresses of Presidents of Veterinary Medical Societies are usually to some extent reminiscent, whilst the authors not infrequently at a later stage indulge in a little prophecy or forecast regarding the course and development of the profession. Under these circumstances and remembering that the speaker is the oldest serving whole-time veterinary meat inspector in the country, it will not be surprising if his remarks to-day are concerned principally with the development of veterinary science in its relation to public health, a branch of professional work with which he has been closely associated for most of his professional life.

As a student, in one of my more thoughtful intervals I experienced a kind of vision in which I foresaw how closely veterinary science was allied to the public health service and in how many capacities the modern veterinary surgeon could very usefully serve the public. In those days, when the thoughts and aspirations of most veterinary students were concerned with hunting, racing and other pleasures to be enjoyed by those resident in the country, my ideas were received with ridicule, but they have always been remembered, and since I drifted out of general practice into public service, every year I can see more clearly the important interrelationship of veterinary science with public health. It is obvious that the modern veterinary surgeon is the only person who, by his training, is qualified to inspect the carcasses of animals as to their fitness for food, and if this position is granted it is merely an automatic and administrative extension for the veterinary officer to include in his inspections the other articles of food as enumerated in the laws concerning that subject. It is equally obvious that the veterinary surgeon is the only properly trained person for the inspection of dairy cows, and it is a similar extension to make that officer responsible for the immediate surroundings of the cows and the production and handling of milk; but it is not so obvious that the protection of the herds and flocks of the country from the ravages of disease by the Diseases of Animals Acts and Orders is principally a measure of public health, until one reflects that the chief purpose for the maintenance of such herds and flocks is the provision of food, and it is therefore suggested that the control of animal diseases is ultimately a measure of public health and should be so considered. More recent developments of the Diseases of Animals Acts and Orders, particularly the Tuberculosis Order, serve to emphasise this relationship of animal health to public health. The veterinary officer is therefore for all practical purposes the principal officer concerned with the purity and soundness of the food supply. To complete his responsibilities in this respect he is nowadays frequently called upon to administer the Food and Drugs (Adulteration) Act, 1928, and the law relating to preservatives, etc., in food, and as a still further extension, the Agricultural Produce (Grading and Marking) Act, and the Merchandise Marks Act, so far as they are concerned with articles of food. There are other respects in which the veterinary surgeon can be of use to a municipality, but his principal concern must remain the food supply.

There will always be required in this country a number of veterinary surgeons for the care of the sporting horses and dogs and pet animals, which occupy such a large place in the public's regard, whilst a larger number will be required for the treatment of the other and more important farm animals, but I believe that the future of the veterinary profession lies in the public service and particularly in relation to the protection of the food supply. The question arises as to whether that change from what we know as general practice to a highly specialised branch is proceeding along a line which is entirely satisfactory, and in this consideration one must indulge in a little reminiscence.

It is not yet recognised generally that the control of contagious animal diseases is a public health measure, so that at present we need consider only meat inspection and dairy cow inspection.

At one time, that is about 30 to 35 years ago, it appeared that meat inspection was about to be placed in its proper hands by the general appointment of veterinary surgeons as the responsible officers. About that time Manchester had then appointed the first whole-time veterinary meat inspector who, a little later, removed to London to supervise the public abattoir, but some years elapsed before it was considered

*Presidential Address delivered at a meeting of the Yorkshire Division, N.V.M.A., held at Leeds on January 29th, 1932.

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desirable to appoint a veterinary surgeon as chief meat inspector at the important meat market of Smithfield—another instance of the proverb which suggests that London is usually behind Manchester in enterprise. About the same time several towns in the North took the step of appointing veterinary meat inspectors, but the plant was delicate, its growth and expansion became gradually more slow, and it is still a sad thought that in a city which prides itself on being one of the foremost cities of the Empire with a well-staffed veterinary department, meat inspection and the control of its public abattoir are still in the hands of a sanitary inspector.

As regards the milk industry, progress has been more satisfactory and in recent years almost spectacular. The number of veterinary officers employed by County Councils principally in the inspection of dairy cows has shown remarkable development, but as in meat inspection the position is still unsatisfactory, and largely arising from the same cause, which will be mentioned later.

The control of the contagious diseases of animals undoubtedly offers a more extensive and unhindered field to the veterinarian, but in this domain also his activities and progress are seriously interfered with by other parties, and it is to be feared that this sectional interest and development of veterinary work in public service is the reason for the meagre and disappointing development which has been achieved.

In the domain of food inspection we are largely the victims of the wording of the Public Health Act, 1875, which fails to mention the veterinary surgeon, and even in places where we are recognised as the proper authority on the subject, interested parties often take advantage of the wording of the section and whilst using our services continue to usurp our places.

It is found that most medical officers of health are quite pleased to recognise the superiority of veterinary surgeons as meat inspectors, but there are in the country far too many sanitary inspectors, acting almost independently of medical officers of health, who regard themselves as efficient meat inspectors and have succeeded in persuading their employing authorities as to their efficiency. It must be admitted that there is an important place for qualified sanitary inspectors in any comprehensive system of meat inspection but, as is now the law in Scotland, such officers should be detention officers and act only under the administration and supervision of veterinary officers. The Royal Sanitary Institute has performed a most valuable public service in carrying out the training and examination of sanitary inspectors as inspectors of meat and other foods and, although I am personally interested in that subject, I maintain that those veterinary surgeons who have assisted the Royal Sanitary Institute in these respects have performed a work which has been of service not only to the public but to the veterinary profession itself, and it only remains for us to maintain that position of superiority in food inspection which has largely been established with the assistance of the Royal Sanitary Institute.

In the domain of milk production, whilst the Milk and Dairies Order expressly names the veterinary surgeon as the proper officer regarding the inspection and health of cows, all other questions are left to medical officers of health and sanitary inspectors, whilst even in the administration of the Diseases of Animals Acts, where veterinary surgeons might be expected to be unchallenged, we find the field invaded by policemen, medical officers of health, sanitary inspectors and clerks. It is no use pointing out a difficulty unless one is prepared to suggest a remedy, and the remedy suggested is the merging of all these services concerning food in its relation to public health under one authority, and that authority should be the Ministry of Agriculture, operating through a special branch.

The supervision and protection of the food supply of the public cannot be dealt with satisfactorily in a sectional manner; it is a national subject and should be regarded as a national responsibility. The whole country should be divided into suitable areas according to local conditions and each of these areas should be provided with its veterinary staff responsible to the Ministry for the control of animal diseases, food inspection, the inspection of dairy cows and the whole milk industry. In each area all private slaughterhouses should be abolished and one of the responsibilities of the suggested new department should be the provision and maintenance of public abattoirs in each area under the control of veterinarians, and such large abattoirs would serve the surrounding districts whether they were part of a city or a county. Existing public abattoirs could easily be taken over under such a scheme exactly as electricity generating stations have been made part of a national scheme. There can be no question as to the fitness of veterinary surgeons for the administration of such a big scheme. The veterinary profession has always produced men rich in administrative ability and there is no reason to doubt that the profession will continue to maintain a supply of such men, particularly when there are the prospects of such ability being appreciated and duly rewarded. Time will not permit the further development of this idea to-day, but having presented the legislature with an idea for the establishment of a satisfactory public health veterinary service it is desirable that we should consider the training of veterinary surgeons for such duties under the five years' course. Veteri-

nary students will receive instruction and training in the various sciences concerned with veterinary public health work, and on qualification will be highly educated men in such subjects, but, just as it is recognised that the newly-qualified man requires several years in which to learn the art of his profession as a general practitioner, so the newly-qualified man must expect to spend some time in a junior capacity, learning by experience and the training of his seniors, how to apply his scientific knowledge in the public service. In other words, general practice and the public service are entirely separate and the decision as to which branch of veterinary work is to be taken up should be made as early as possible after the young man has qualified.

Although for some time doubtless the part-time services of some general practitioners will be required in any scheme, it is now considered that the public veterinary service is sufficiently important to require the whole of a man's time and attention, and as veterinary public service develops and extends this feature will become more and more prominent.

Lastly, what should be the attitude of the veterinary profession as a whole to its members engaged in the public service? In the past it cannot be said that the profession, either as individuals or as organisations, has always given proper support to these men. Too frequently has one heard them referred to with contempt, but I maintain that such men have been pioneers and by establishing veterinary science in the public health service have performed a great work for the profession which has suffered a great change in its outlook within recent years, and that the veterinary profession as a whole should appreciate those efforts and give them their moral support.

In conclusion, I beg to thank you for your patient hearing and to express the hope that you will recognise that my remarks, although in places outspoken, are only made in the interests of the profession to which I am deeply attached and which I long to see duly appreciated and rewarded.

The undesirability of granting slaughterhouse licences to butchers in country districts, owing to the risk of meat escaping inspection, was stressed by Dr. Gibbons Ward (Medical Officer of Health) at a meeting of the Southam Rural Council. An application was, however, granted.

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The pig industry had become the most hazardous of all the divisions of animal husbandry. This was, in his view, due largely to the manner in which those engaged had been harassed by restrictions and regulations. Yet they were threatened with further restrictions. If this was the policy that was going to be applied, then they would have the cows in the towns, but the pig would be pushed off the map.—*Professor Share Jones.*

JOHNE'S DISEASE*

A. LESLIE SHEATHER, D.Sc., M.R.C.V.S.

I should like to express my appreciation of the opportunity which your invitation has given me of meeting the members of the Yorkshire Veterinary Medical Association. I need not add that I am only too pleased to do what I can to help in the struggle against this disease by putting at your disposal such information as I have regarding it.

As you know, I have spent the whole of my professional life in pathological laboratories and consequently I have seen Johne's disease from an angle which is rather different from that from which the general practitioner sees it. There is, however, one aspect of it which is common to both and that is the question of diagnosis. As this is an afternoon meeting, and as I must return to London this evening, it is clear that the time available will be somewhat limited. I therefore have decided to devote myself almost exclusively to that side of the problem.

Johne's disease seldom or never makes its appearance as a clinical condition in animals under 18 months old, but there is no doubt that infection may, and actually does take place in some cases, at a much earlier age.

In the *Journal of Comparative Pathology and Therapeutics* for September, 1927 (Vol. 40, p. 224) I recorded a case in which a calf must have contracted the infection within two months of birth.

While the bacillus of Johne's disease is considered to be a relative of some kind of the tubercle bacillus on account of its staining reactions, it is to be noted that in some more important respects it differs from the tubercle bacillus very definitely.

The bacillus is peculiar among the organisms that are responsible for chronic infections in that it causes no damage or destruction of any of the cells of the animal body among which it establishes itself. The effect of invasion of the tissues is not a destruction but a multiplication. It is true that in all tuberculous lesions there is an initial multiplication of cells, which is perhaps most clearly seen in the miliary lesions which develop in the lungs as a result of invasion of the blood stream. These cells, however, invariably undergo changes subsequently which result in their destruction. That is not the case in Johne's disease. So far as I am aware, there has never been recorded an uncomplicated case of Johne's disease in which there was any ulceration of the bowel, or necrosis of the infected lymphatic glands.

I think that it is highly probable, if not absolutely certain, that strains of the bacillus

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vary in virulence, and I also think that animals vary in the manner in which they react to infection. Variation in virulence would be difficult to prove because of the restricted pathogenic range of the organism. Variation in the capacity to react to infection can, I think, be inferred from the variation which one encounters in the lesions found in infected animals. In the great majority of clinical cases the lesions, which are well known to you, are obvious and microscopic examination readily reveals the bacillus in large numbers in preparations made from the affected parts of the mucous membrane. One does, however, occasionally encounter cases which differ from the typical case in one of two ways: either the lesions may be quite insignificant to naked-eye inspection while bacilli can be demonstrated in large numbers, or there may be very obvious lesions and a considerable amount of searching may be required for the detection of the bacilli.

It is admitted that such cases are exceptional but their occurrence must be borne in mind.

The significance of these facts is, I think, two-fold. In the first place it emphasises the necessity of a thorough search in cases where bacilli are not immediately detected. In the second place these facts have some bearing, or so I am inclined to think, upon the question of the reactions which may be obtained by the injection of diagnostic agents. This will be referred to later. The distribution of the bacilli in the bowel has been shown to be more or less constant. Systematic examinations of a considerable number of cases indicated that the terminal portion of the small intestine, the cæcum, and the anterior part of the large intestine were the most commonly affected. This is of importance when pieces of bowel are being sent to laboratories for diagnostic purposes.

So much for the diagnosis of the disease after death has taken place. If Johne's disease is to be got under control diagnosis during life is essential.

You are all far more familiar with every phase of the clinical picture presented by Johne's disease than I am, and I will therefore pass that over.

What can be done either to confirm suspicions raised by clinical observation or to detect animals showing no clinical evidence of infection?

Since I started my laboratory four years ago I have had a good many samples of fæces submitted to me from suspected cases for the purpose of confirming the diagnosis, if possible. Previous experience had shown that the direct examination of smears of such fæces was not of much value, but it seemed that if the bulk of the coarse vegetable débris were removed by straining through gauze, and the resulting fine sediment concentrated by centrifuging, the chances of finding the bacillus would be greatly increased. By proceeding in this way I have been able to arrive at what I believe to be a correct diagnosis in a considerable number of cases. By that I mean that I have been able to find bacilli which were quite indistinguishable from the bacillus of Johne's disease. While it is no doubt a fact that acid-fast bacilli other than countered in the fæces of cattle, it is my experience that they occur very infrequently, and ience that they occur very infrequently, and when they are encountered in film-preparations they are definitely recognisable as not being Johne's bacilli. I think there can be no doubt that when one has worked for a long time at Johne's disease one's eye becomes trained to recognise the bacillus specifically and to distinguish it from others. Of course, in many cases the bacilli occur in small clumps, and their recognition is easier. It is my experience (and it is, of course, what one would expect), that the chances of finding the bacillus in the fæces increase with the progress of the disease. I find that if the disease has advanced to the stage when the fæces are actually fluid, bacilli can usually be found in the course of a few minutes' examination. If the fæces are only at what I may call the sloppy or pasty stage and require the addition of water before they can be strained, the chances of finding bacilli in them are definitely smaller.

The examination of preparations made from fragments of mucous membrane pinched from the rectum is, I think, less likely to yield positive results than examination of fæces; and of course it is only a positive result that is of any value: a negative result warrants no opinion.

Finally, we come to the question of the use of diagnostic agents. Following the lead given by Sir John M'Fadyean a good many years ago, these agents are generally called "johnin." Attempts to prepare a satisfactory type of johnin have been made for many years, but progress has been slow. No doubt the cessation of research work during the war was a definite hindrance to progress. I should like to say that the slow progress is not, in my view, due to lack of effort on the part of those who have taken up the subject. There can be no doubt that the investigation of Johne's disease in general has been greatly hampered by the great cost of it. Unfortunately there is no animal other than the bovine which can be used for observation and experiment.

Many attempts have been and are still being made to prepare a useful and reliable type of johnin. For the reason given above, the research work is itself costly, and it seems to me to be quite clear that no final opinion as to the value of any diagnostic agent can be based upon the efforts of the research worker alone.

A proper appreciation of the value of any agent can only be based upon the critical examination of a large number of very carefully recorded results. In any piece of investigation unreliable conclusions are likely to result if the number of experiments is small. A small number of tests of such materials as johnin may lead to it being hailed as an infallible diagnostic agent or utterly condemned as a useless one. The truth, no doubt, lies between these two. It must not be forgotten that when one is dealing with living things, whether higher animals or microbes, there is almost endless variation in biological characters; consequently, it is probably correct to say that the perfect diagnostic agent which never gives a doubtful reaction and never makes a mistake—whether the disease be Johne's disease or any other—will never be prepared. I perhaps need not add that another variable factor is the human factor in the carrying out and the interpretation of results.

In any case, the largest possible number of the most carefully controlled tests must be collected and the results must be very critically examined. A sufficient number of tests cannot be carried out by laboratory workers on the ground of the cost. If progress is to be made the cost must be shared. I know that the ever-present problem in veterinary work is—Will it pay? Problems on a large scale cannot be tackled unless the cost is shared.

As I have already said, several workers are trying to produce a reagent which will be reliable for the diagnosis of Johne's disease, and I hope that it will not be long before the results obtained by some of these are published. For the reasons I have given above no final opinion of the value of the reagents can be formed upon such results. Large as the numbers may be, they will not be large enough for that. They will not do more than furnish an indication to the field worker as to what he may expect in the way of reactions. Final opinion as to the value of any agent will only be based upon a very large number of tests in the field.

I have carried out no johnin tests myself and consequently I cannot give any information based upon my own experience. Whatever I may know about the work of others which has not yet been published, I am not in a position to make any statements as to the results they have obtained. Within the last few weeks statements have, however, appeared in print which enable me to say that it is known that some infected animals will react to johnin, and it is a fair inference that some progress is being made. (I hope it is not necessary for me to say that I in no way inspired the letters which have appeared recently in the *Veterinary Record* on this subject).

At the meeting of the National Veterinary Medical Association at Ayr two or three years ago, in the course of a discussion on Johne's disease, I gave certain reasons for thinking it possible or even probable that no agent for the detection of Johne's disease would ever be prepared which would give the pronounced reactions that are given by tuberculin. As I said earlier in this paper, infection of the intestine with the bacillus of Johne's disease causes no destruction of any of the cellular elements, but only a multiplication of them. In other words, the bacillus in some way acts merely as a stimulus to the cells. In using a diagnostic agent one is therefore trying to detect the presence of this substance. It appears to me that such a substance is less likely to be capable of producing a pronounced reaction than the definitely destructive material associated with the tubercle bacillus.

I think it is quite possible that, just as animals appear to vary in the way in which they react to the invasion of their tissues by the bacillus, so also they may vary in their capacity to react to a diagnostic agent.

I am not divulging anything when I say that clinical cases of the disease may not react to johnin. This is, of course, parallel with what happens in tuberculosis.

It is certain that johnin will cause reactions in animals affected with Johne's disease even in the very early stages, but there are questions connected with the test which require answers, and these answers cannot be given finally by research workers because their cases are not sufficiently numerous. These questions are:—

(1) What is to be considered a positive reaction? The answer to this can only be supplied by large numbers of exact records of tests controlled by *post-mortem* examination.

(2) In what proportion of non-clinical cases does failure to react occur?

(3) It will be difficult to supply an answer to the question whether non-infected animals ever react—because the infection may be so slight, as it sometimes is in the case of tuberculosis, as to escape even the most searching examination.

(4) Will animals infected with other diseases, uncomplicated by Johne's disease, react to johnin?

These are the questions to which answers must be supplied, and these answers can only be based upon a large accumulation of accurate data.

Discussion

In the ensuing discussion most of the speakers were anxious to elicit information as to the possibilities of a diagnostic agent: one or two members asked for details as to the technique to be employed in using the agent and most seemed to look for some indication as to the results that might be expected.

Mr. D. S. Rabagliati expressed the gratitude of the members to Dr. Sheather for the address and, continuing, said that he thought that in most clinical cases of the disease it was possible to differentiate the condition from other diseases showing emaciation. In his opinion the disease was increasing in incidence and especially appeared on certain farms in enzoötic form: he gave some interesting figures obtained in the operation of the Tuberculosis Order showing the number of cases in which Johne's disease is associated with tuberculosis. A proper idea of the incidence of the disease would be obtained if it were to be scheduled.

Mr. W. A. Campbell had found, in his experience, that the Guernsey breed seemed very susceptible to Johne's disease and frequently they appeared to suffer in a more acute form. He thought that in advanced cases it was usually easy enough to make a diagnosis. The speaker mentioned that many animals appeared to undergo a slight change of colour—in the case of red animals the colour became dull and lustreless. He considered that the presence of bubbles in the fæces was of no guidance at all in making a diagnosis, as this occurred in other cases of chronic diarrhœa from different causes.

Mr. W. R. McKinna enquired as to whether a similar corrugation of the bowel as seen in Johne's disease occurred in any other affection, and also instanced cases where corrugation of the bowel was found without a history of diarrhœa or wasting. He had noticed, on making *post-mortem* examinations of animals affected with Johne's disease, that the fat possessed a very rich yellow colour.

Mr. S. B. Vine asked for information as to the lapse of time from the date of infection to the onset of the symptoms of diarrhœa.

Mr. W. T. McGregor mentioned the clinical cases of the disease in which, for a longer or shorter time, the condition of the fæces returned to normal, and also asked if it could be explained why, in animals which were very badly affected, showing gross lesions in the bowel, the bacilli were sometimes very scanty and difficult of demonstration.

Mr. G. E. Sampson expressed the view that the disease was greatly on the increase and dealt with the diagnosis of the disease from the clinical aspect. He said there was a different sensation in "handling" an animal suffering from emaciation due to Johne's disease, by reason of the great amount of wasting in the subcutaneous muscular tissues. He wondered whether it would be possible for the infection to be carried by hay from infected pastures.

Others taking part in the discussion were Lieut.-Colonel H. G. Bowes, and Messrs. F. C. Scott, G. E. Bowman and J. W. Procter.

THE REPLY

In reply, Dr. Sheather first dealt with the numerous questions put as to the work being done with a diagnostic agent. He said he was not in a position to say what the results of this work were to show. He had been responsible for the preparation of an agent, but the field work and tests of the agent were in other hands and it would be stealing other people's thunder if he were to say anything yet of the results which were so far being produced. He would merely say he felt some optimism for the outcome, but wished to warn practitioners that no biologic product ever produced was likely to be infallible.

Dr. Sheather went on to say that the symptom of excessive diarrhœa in cattle he generally grouped into three classes:—

(1) The hæmorrhagic diarrhœa of very young bovines, which in 99 per cent. of cases was due to coccidiosis;

(2) The diarrhœa from calfhood to the age of 18 months, almost invariably due to parasitic gastritis;

(3) The chronic diarrhœa of adult cattle, mostly due to Johne's disease.

In answer to Mr. Rabagliati he said that it had not been his experience to find it easier to demonstrate the bacilli in the mesenteric glands than in the mucous membrane. He was unable to explain why, in many cases, the diarrhœa should be intermittent in character and said that there was no other disease which showed the characteristic corrugation of the bowel. The excessive yellowness of the fat noticed at *post-mortem* examination would probably be due to anæmia and co-existent changes in the blood. As to the period of incubation, it was usually a very long time and generally could be said to be from one year to 18 months; in his opinion infection was very often in calfhood and no symptoms were shown until the age of 18 months at least. The presence of bubbles in the fæces was certainly not diagnostic of the disease: this appearance could be seen in any condition where there was atony of the bowel and excessive fermentation. There was no method of knowing whether infection might be carried by hay or not, as there was no experimental animal on which inoculation tests could be carried out: he thought, however, that, considering the exposure of the pasture and hay and the heating undergone in the stack, the chances of hay acting as a carrier of infection were negligible.

SALAMANDER*

WINNER OF THE GRAND NATIONAL, 1866

Interesting Record of a Great Steeplechaser.

(Inserted at the request of a number of practitioners)

In several notes on entire horses that have won the Grand National which appeared in these columns last spring some doubts existed as to whether Salamander, the winner of the race in 1866, had been gelded. There are few now alive who saw the horse, but happily I have been able to secure information from two gentlemen who were eye-witnesses of the race in which he met his fate. I am greatly indebted to Mr. Charles H. Huish, who is now in his eighty-fifth year, for his account of the event, and as he was a veterinary student in those days it may be accepted that he took more than an ordinary interest in Salamander. Here is his story:—"With the exception of Sir J. S. Kynaston Studd, I am probably the only person alive who witnessed the accident to, and death of, Salamander, possibly the best horse that ever won the Grand National. I have been asked by a fellow-townsman, who, by the way, is always interested by what he reads in 'Horse and Hound,' to give my impressions of this wonderful steeplechaser. In the years 1865 and 1866, the West Somerset Steeplechases were held at Hazelbury, and later at West Chinnock, both villages being adjacent to the small town of Crewkerne, in Somerset. These steeplechases were at that period very popular in the West Country, and they attracted some of the best steeplechasers in the country. In connection with the Grand National Hunt meeting, held at Crewkerne in 1866, Mr. Studd (father of Sir Kynaston Studd, Bart., who was Lord Mayor of London in 1929-30), the owner of Salamander, the winner of the Grand National of that year, together with

**Horse and Hound*, January 8th, 1932.

Mrs. Studd and a large party of friends, both ladies and gentlemen, made my father's house, the Red Lion Hotel, his headquarters for the meeting.

A Most Unlucky End.

"In addition to Salamander Mr. Studd also sent Shangarry and Swallow, both Irish-bred. Shangarry, entered for the Grand National Hunt Race on the first day, was made favourite, and easily beat a large field. There was a brilliant dinner party that night at the Red Lion, and all present wore the racing colours, 'cerise and white,' of the host, while the table was decked out with cerise and white carnations. It was 'open house' at the Red Lion, with champagne *ad libitum* for all and sundry, the health of Mr. Studd being drunk with great enthusiasm, coupled with the hope that the success of Shangarry would be followed by that of Salamander on the following day, when he was to run in the West Somerset Open Steeplechase (3½ miles). Unfortunately, in preparing the course it was necessary to make a culvert to cover a drain, which was filled in with clay, a short distance from the winning post. It rained heavily during the previous night, and most of the next day on which Salamander was due to run. The enclosures were like quagmires, and the going very heavy over the entire course. As a winner of the Grand National, Salamander, carrying top weight—I believe 12-st. 10-lb.—was made a hot favourite for the principal race of the day, and started at 7 to 4 on. As was usual with him, Salamander took his fences in his stride, thus gaining considerably over horses who slowed down to take-off and dwell upon landing. He was going splendidly, and jumped the last fence cleverly before coming to the winning post, but, when leading the field, and winning easily, he came to the culvert mentioned. Putting his forelegs deeply into the clay, made extra soft by the rain, he could not pull them out before his hind legs were up to them, and, turning a somersault, he broke his back, throwing over his head Mr. Alec Goodman, his gentleman jockey, and as he (Salamander) lay on the ground he stretched out his neck and neighed.

Grief for Loss of a Good Horse.

"Mr. Blake, the Crewkerne veterinary surgeon, and father of Charlie Blake, for years 'Augur' of the 'Sporting Life,' was soon on the spot, but finding that his case was hopeless he pithed him. Mr. Studd wept like a child over the death of his favourite, while Mrs. Studd, who practically trained Salamander before he won the Grand National, was equally upset. The hooves, etc., were subsequently dispatched to Ward, the well-known taxidermist of Piccadilly, who mounted them as inkstands, one of which is now in the possession of Sir Kynaston Studd, while others were presented to various members of the family. Directly after the death of Salamander, Mr. and Mrs. Studd and their party left the course. My mother took Mrs. Studd and the rest of the ladies to Hodge, the draper, and they appeared at the table dressed in mourning out of sympathy for their old favourite, so the dinner was a mournful function. Mr. Studd was recognised as being a great judge of a hunter and steeplechaser, and would have nothing but Irish horses. He was reported to have bought Salamander, who was undoubtedly a gelding, out of a dung-cart in Dublin for £13. It seems somewhat remarkable that the small town of Crewkerne should be intimately connected with two Grand National winners, *viz.*, Salamander and Lord Poulett's famous little grey The Lamb, who won the great steeplechase twice, *viz.*, in 1868 and 1871. Lord Poulett's mansion, Hinton House, is only three miles distant from Crewkerne." Thus end the interesting details sent me by Mr. Huish, who wrote to Sir Kynaston Studd for information concerning certain details as to souvenirs made from the carcass, and he received the following reply:—"It has given me great interest to read your notes, as I was present at the race, and have vivid remembrances of the tragedy. Your statements with regard to it are entirely in accordance with my memory, though I could only have been a boy of seven at the time. I know nothing of a dining-table having been made, supported by the legs of Salamander, with the head and neck mounted on an oak shield, and the skin made into a hearthrug. Certainly they were never in our home, but the hooves of Salamander, turned into inkstands, were presented to various members of the family, and I have one by me now."

NATIONAL PONY SOCIETY

At the recently-held annual general meeting of the National Pony Society Mr. H. S. Tufton, who has been associated with the Society's work for many years, was elected President during the ensuing year, and Sir Ian Walker was nominated President-elect for 1933.

Captain France-Hayhurst, referring to this year's show, said it was disappointing that the brood mare classes were not filled. They were losing pony character in a lot of their ponies, and breeders should be encouraged to keep mares that were likely to make good brood mares.

Mr. Roy B. Charlton, expressing the thanks of the Society to Captain W. H. France-Hayhurst for his services as President, referred to the withdrawal of the War Office premiums for moorland stallions. In the case of the Dales and Fell ponies, he said, they had received £720 regularly from the War Office. This year they were to receive nothing. The Dales Society had arranged to provide private premiums, but in the case of the Fell Society it would be very difficult to raise money, and he was afraid that ultimately they might lose their breed because of the absence of premiums. He hoped the National Pony Society would be able to make overtures, either to the War Office or to the Ministry of Agriculture, in order that some assistance might be given to keep the spring shows going until better times arrived.

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SLIPPERY ROADS

"It is noticeable that some county authorities manage to keep their rural roads in a fit state for horses as well as motor traffic," says *The Times*. "In other areas any road but a farm lane has been made well-nigh impossible for horses because of the glassy surface. This is a serious matter for many farmers, because they dare not now put a team of horses on the road. It is exasperating to have to hire motor-transport for almost every carting job when there are horses on the farm which could do the work if the roads were fit for them to travel on. Since some county councils contrive to meet the needs of farmers as well as motorists there must be road dressings which provide a grip for horses as well as an even, non-skidding surface for motor traffic. There appears to be need for an exchange of experience by the road authorities, and farmers would welcome assurance from the Minister of Transport that their requirements are not being overlooked in developing the technique of road-making."

Clinical Communications

CLINICAL FRAGMENTS

F. T. HARVEY, F.R.C.V.S., St. Columb

(I) Mercurialism in Cattle

In the course of practice I have met with cases of mercurial poisoning of a type which would not appear to be commonly encountered, judging from the literature. The long period which elapses from the time the animal receives mercury in some form or other, and the onset of symptoms, is very misleading, and evidence of its use at any time may not be forthcoming. The usual description of mercurialism given is that it is characterised by salivation, tenderness of the mouth and gums, impaired appetite, dyspepsia, diarrhœa, muscular tremors, emaciation, and in some cases an eruption on the skin. This follows closely the description of mercurialism in man, and may not necessarily apply to herbivora in an equal degree, since conditions may be greatly modified, and the interactions of poisons, if not differing in kind, may be differently manifested in animals compared to man.

In all cases but one the first indication of anything being amiss with the animals has been that one or more have been found unable to stand. There is no salivation, and the appetite remains fairly good although slight tympany may occur. Recovery in some cases takes place in a few days, but usually the patients go from bad to worse. There is arching of the back (kyphosis), muscular wasting, and marked adduction of all the limbs. The animals appear like huge frogs lying in the sterno-abdominal position. Pulmonary or other complications may set in and end matters, or the condition may continue for some weeks if the animals are not destroyed. I have seen no benefit from treating the latter type of case.

Approximately ten instances involving between 20 and 30 animals have been encountered, and the compounds of mercury incriminated include the biniodide, the nitrate, the yellow oxide, the bichloride, grey powder, and blue ointment, and most of the cases have occurred in connection with the treatment of ringworm, four of them with ointments supplied by chemists in different towns.

Cases.—(1) Asked to visit a farm as two yearlings were unable to stand. I noticed some hairless spots on the face and neck and some patches of active ringworm. The yearlings, five in number, were all affected with ringworm, but not severely. I was informed that a dressing obtained from a chemist had been applied on two occasions, the last being three weeks ago. All trace of ointment had disappeared. The container was found labelled "Ointment of Nitrate of Mercury B.P." Iodide of potassium was administered, but both animals were subsequently destroyed.

(2) Almost a duplicate of the above, two calves being affected; both died. Yellow oxide of mercury ointment obtained from a chemist had been used.

(3) Here again two yearlings were involved. One was able to get up with difficulty and in a few days recovered, but the other followed the usual course. The owner first blamed the cold weather or possibly that the animals had been fighting. Some hairless patches and spots of active ringworm suggested poisoning by mercury. It was found that the animals had been dressed once, four weeks before, with an ointment supplied by a chemist who specialises in animal medicines. A second box of ointment was about to be used when the animals were found amiss, but it was decided to wait until I had seen them. The ointment was described as being a quick and certain cure for ringworm and as containing "Hyd. Iodid. Rub. 7·3 per cent. Poison. To be repeated in ten days if necessary." One wonders how many animals are killed each year by such ointments. Few laymen would associate an illness in an animal with a ringworm dressing applied a month earlier, for all trace of it would have disappeared. It is the object of this paper to emphasise the long quiet or latent period which may intervene between the entrance of mercurials into the system of cattle and the manifestation of symptoms.

(4) On one occasion, many years ago, three six-months-old calves were each given 3i of "grey powder" in one dose by placing it well back on the tongues. In 14 days a very thick scurfy eruption appeared over the bodies and a week later all were on the ground, death supervening. Both Finlay Dunn and Wallis Hoare give the dose of "grey powder" for calves as gr. v to gr. xv twice daily. The latter would, I think, be dangerous with more than three doses.

(5) About 1890 a Lincolnshire firm advertised, amongst other things, a preparation named "Liq. Antiseptica Fort.," and particularly recommended it for ringworm. I foolishly acquired a sample and sent out one bottle for use as directed on some young beasts affected with this disease, and later had the misfortune of seeing two animals die in the usual manner. I paid the owner for his loss. It was an acid solution of the bichloride, coloured red.

(6) Case incriminating ung. hydrarg. fort.

Some years ago a recipe for an ointment for foot rot appeared in the *Journal of the Royal Agricultural Society*. It contained, amongst other ingredients, "blue ointment." Some farmers who used it reported favourably, and one found it also cured his calves of ringworm. His

neighbour, however, who used it in a similar manner, was unfortunate and lost two. The ointment was not suspected.

I do not know to what extent poisoning may follow the use of biniodide in actinomycosis cases, since it is usually combined with potassium iodide, but I have seen ill effects follow its use. In discussing the matter some years ago with the late Mr. John Dunstan, of Liskeard, he told me that he had abandoned the use of biniodide in actinomycosis as he had had cases of poisoning therefrom.

A young cow in rather low condition suffering from actinomycosis of the tongue was at first given potassium iodide and finally biniodide. A few weeks later the owner noticed some difficulty in rising and when I saw her she was quite unable to do so. The intradermal test was negative. No gross lesions were found on *post-mortem* and the cause of the illness was not determined, but the biniodide was suspected.

. . . . .

(II) Bovine Dentistry

The note in the *Record* of February 27th regarding bovine dentistry serves to direct attention to a subject which has been somewhat neglected in farm animals other than the horse. The teeth of cattle may require attention not only in the manner described by Dr. Schalk, but for other conditions, particularly those involving the incisors. Disease of one or more of the latter may stop the animal taking food for days together, and also determine a generalised infection, but it is not intended here to do more than direct attention to the matter, since the field is too wide to cover in a note of this kind. Two or three examples, however, may be given.

Three cases of actinomycosis of the tongue met with during the past year, have greatly benefited through having the molar teeth attended to, and also a case has been seen in which a sloughing condition of the dorsum of the tongue resulted from a spike-like condition of the molars. Here the mouth was very foul, and neither food nor drink had been taken for days except in very small amounts. Recovery took place in due course after the teeth had received attention.

I regard the incisor teeth as the focus of infection in a proportion of cases of the so-called malignant catarrh. It is quite easy to overlook a diseased incisor in bovines and on several occasions symptoms very suggestive of the latter disease have been observed in which there has been suppuration in one or more alveoli. In such cases one notes a high temperature, rigors, brick-red catarrhal membranes, increase of synovia in the joints and sheaths of tendons, lameness, anorexia, high pulse rate, and disturbed snuffling respiration. Extraction of such teeth is of paramount importance.

HÆMORRHAGIC SEPTICÆMIA (?)

GEO. N. GOULD (Junr.), M.R.C.V.S.,
Southampton

I have read with great interest the articles on the above subject—clinical by Messrs. Pratt and Gold, M.R.C.V.S., and theoretical by Professor S. H. Gaiger, F.R.C.V.S.

In 1930 I experienced an outbreak of hæmorrhagic septicæmia (?) in a herd of about 17 cows, all of which were affected and of which three died. I am recounting these facts from memory, but I wrote an article on the outbreak at the time and it was reported in the *Record*. The condition as I experienced it in that outbreak was of the pulmonary type and was marked clinically by repeated dry cough and extremely high temperatures, 106° F. to 108° F., which persisted for a period of 10 days or more in spite of all medicaments, and typical acute pleuro-pneumonic symptoms. The outbreak was investigated by Veterinary Officers of the Ministry of Agriculture, but no diagnosis was made by them to my knowledge. A blood sample was taken by me in one of the earliest cases when the temperature was acute, and forwarded to Dr. Hare for examination, but this proved negative. *Post-mortem* examination showed pleuro-pneumonia with marked thickening and œdema of the inter-lobular septa, from which serum exuded on cutting, and the lung tissue hepatised and friable. A peculiar feature I commented on in my description of these cases was a number of pin-point saxe blue hæmorrhages in the capsule of the liver and kidneys. This was seen in all three *post-mortem* examinations.

The animals that recovered have had no recurrence of the condition since.

This outbreak satisfied some of Professor Gaiger's conditions for the outbreak to have been hæmorrhagic septicæmia. The bipolar organism was isolated from the lung tissue by Dr. Hare and, as reported in my article, these cattle had had access to a marshy pasture of about 10 acres which normally at that time of the year (early spring) was under water, but which, as a result of the abnormally dry season, had been sufficiently dry to be used for pasturage. Every animal turned out in this pasture contracted the disease.

On January 31st, 1932, I reported another suspected case of this disease to Dr. Hare and forwarded a portion of lung tissue. He again confirmed the condition as being due to the bipolar organism, but pointed out that there were two schools of thought on the subject. This case fulfils Professor Gaiger's requirements more closely, and the following details are as reported to Dr. Hare on January 31st, 1932:—

"I first saw the cow on Tuesday, the 26th, and was informed that she had been off colour for about three days with complete cessation of appetite and rumination and giving practically no milk. She calved three months previously

quite normally. On examination the temperature was 105·8°, pulse rapid; the cow emitted occasional grunts, indicating abdominal pain. There had been no action of the bowels for two days. The cowman was very indefinite as to the nature or action of the bowels previous to that. Both quarters of the udder on the milking side showed some induration but the milk appeared normal and remained so throughout. There was profuse salivation and the buccal mucous membrane appeared to be inflamed. There seemed to be some difficulty in deglutition, but no obvious œdema of the throat.

"After medication the bowels acted on the second day—a little hard, high-smelling fæces, followed by more liquid tarry high-smelling fæces. Temperature varied from night to morning from 105°-106·2°. The grunting increased and the cow died on Friday.

"I did not see her for two days prior to death and at my last examination she showed no pulmonary symptoms, but I understand from the cowman that a dry cough developed during that time.

"*Post-mortem.*—Acute inflammation of fourth stomach. Intestines showed no acute inflammatory changes. Contents:—tarry and liquid and small in quantity. First three stomachs, kidneys, liver and womb—normal. Lung showed throughout thickening of the inter-lobular connective tissue, from which serum exuded on incision. The lower thirds of both lungs were dark red and friable. There was no pleural or pericardial effusion and no œdema of pharyngeal lymphatic glands.

"*History.*—The owner had lost three cows within a month prior to this one and in no case had a diagnosis been made. (This was the first animal I had attended on the farm.) The cow that died immediately before this was taken ill and died in 72 hours with a temperature of over 105°. She grunted similarly to this one. The previous two cases appeared to have been more or less similar, but of these cases I have only the cowman's and the owner's version.

"No diagnosis was made by the veterinary surgeon attending. No similar sequence of deaths had been known on this farm. The quality of the hay and other foodstuffs was good and had been unchanged for some weeks.

"The cattle in question had been pastured, just prior to the first case, on a damp, waterlogged, clay-soiled pasture. The weather had been abnormally mild for the time of the year.

"I advised the owner to move all the cows to a high dry pasture and to top dress this one with superphosphate and 'kainite.'

"The next day another cow was taken ill, with a temperature of 105° F. She was given serum and recovered in 5-6 days. The symptoms exhibited were salivation (as in the previous case), inappetence, abdominal discomfort (grunting), and profuse tarry diarrhœa. Temperature 105° F. No cases occurred after removal from the suspected pasture other than this one. The incubation period is, I believe, stated to be 2-3 days."

The farm on which these two cases occurred is 25 miles from the farm on which the outbreak in 1930 occurred. A marked feature of all the cases was the very sudden development of the disease. The cows would be apparently normal at one milking, giving the usual quantity of milk and showing no abnormal symptoms, and a few hours later at the next milking would be obviously ill.

To me it would appear that the designation "Hæmorrhagic Septicæmia" is amply justified from the clinical point of view, and if nothing else serves as nomenclature for a condition of which pathologists appear to have but little knowledge and that which they do possess they disagree about.

Perhaps Professor Gaiger can supply clinicians with an alternative pending some definite research into the actual pathology of these extraordinary outbreaks.

If I should experience any future outbreaks of similar nature I shall be glad to supply Professor Gaiger with any material he may require for research.

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PSORIASIS IN THE CAT

HAMILTON KIRK, M.R.C.V.S.

Judging by the paucity of information concerning psoriasis in the standard text-books on canine and feline diseases, one must conclude that this complaint is exceedingly rare. My clinical experience among cats supports this view; thus when an instance of its occurrence comes under observation, it becomes a fitting occasion for publicity.

The cat in question was a full-grown Champion Blue Long-Hair, which, upon admittance to hospital, presented a most curious appearance. The whole of the nose was devoid of hair, very swollen, and covered with a tightly-adherent layer of black-pigmented scab. It looked, in fact, something like a pugilist who had had his nose flattened by a heavy blow.

The lesion was tender, and attempts at removal of the scab caused a good deal of pain, which it was hardly possible to avoid. At first, therefore, I had to be content to cover it with softening ointment—several kinds being tried, as each one apparently failed to exert any effect. The spread of the lesion, in an irregular contour, continued until the greater part of the face was affected, including forehead, cheeks, lips and around the orbits. Nearly three weeks elapsed before I discovered a remedy which showed promise. During this time Odylen, zinc ointment, mange ointment and scarlet red ointment were all given a few days' trial.

I did not consider that ultra-violet rays would be beneficial, on account of the thick layer of

densely-packed epidermal cells which covered the skin. When any of this could be removed, there was seen beneath a red and sore surface, slightly moist, but sometimes dry.

This scab did not become detached and flake off, as in seen in some cases of dermatitis or ringworm. Microscopical examination was negative.

At the end of three weeks the cat's face had the appearance of elephant's hide—wrinkled, dark and hard. I have seen nothing like it before. It was then that I bought some "sphagnol" ointment, being willing to clutch at any straw, and I was much gratified, after about three days, to find the scab peeling off and the skin beneath looking healthier. This treatment was continued with enthusiasm until the end of the 31st day, when it was no longer required. The cat was discharged when the young hairs were seen to be coming through nicely.

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A Ringbone Query

Readers are invited to send, for publication, their answers to the following enquiry: "Is ringbone in the horse invariably associated with lameness or pain?"

From *The Veterinarian*

March, 1832.

We were right glad to recognise in the communication of V. S. of P— B— the handwriting of a valued correspondent, otherwise we should have been compelled, and most unwillingly, to postpone his observations on the paper of W. J. G. . . . .

Thereby were we enabled to insert his paper without the violation of a rule, from which, and we repeat it for the last time, nothing shall induce us to deviate. *We will know our correspondents.* On a scientific or practical subject it is highly desirable that we should, otherwise what voucher have we for the accuracy of any statement that may be made? On subjects such as that which have employed the pens of these two gentlemen it is imperatively necessary. No-one shall make a personal attack to which (with regard to us at least) he is afraid or ashamed to affix his name. Therefore, let us not be misunderstood—while, in the language of V. S., we consider *The Veterinarian* as "a general storehouse (why is it not more used?) and unbiassed disseminator of the opinions and views of all," and will neither reject nor decline to register those of any, which are neither too personally vehement in expression nor notoriously erroneous, we do also consider ourselves so far "responsible for the bearings or complexion of conflicting sentiments" and so strictly bound to see fair play, that we will know every combatant.

Mr. Roy B. Charlton, speaking at Newcastle on ponies, referred to the growth of pony clubs, a movement which began only two years ago. Already they had 5,000 juveniles under seventeen years of age. Pony riding by children was becoming more and more popular.

Abstracts

[**Human and Bovine Tuberculosis: The Question of Mutation of the Tubercle Bacillus.** Raw, N. *Brit. Med. Jour.* No. 3712. February 27th, 1932, pp. 377-8.]

A case, investigated by the author, is recounted and discussed, which appears to support his theory that bovine tubercle bacilli introduced into the human body in infancy or early childhood may, after many years growth in new tissues, undergo mutation and become human bacilli, capable of producing the usual lesions in the human body generally attributable to the human bacillus.

Prolonged subculturing of the three types of bacilli—human, bovine and avian—has convinced the author that no change occurs in cultural characteristics under this process: it is only when the tubercle bacilli are placed in a new host, as in the human body, that mutation occurs. That the original bovine bacillus is being slowly changed into an intermediate or even a true human bacillus is the suggestion put forward by the author to account for Stanley Griffiths' findings that in children under five years of age 90 per cent. of cases of tuberculosis are due to infection with the bovine type of bacillus, whereas in cases between 20 and 40 years of age, the percentage due to human bacilli is much higher than that due to the bovine type of organism.

The vast majority of cases of pulmonary tuberculosis occur between the ages of 18 and 30, and this fact, considered in conjunction with the accepted view that infection takes place in early childhood, leads Raw to suggest as a possibility that bovine bacilli introduced into the alimentary system in childhood *may* remain dormant in the mesenteric glands for a period of 10 to 15 years, in the meantime slowly assuming in human tissues the characteristics of human bacilli. By direct lymphatic extension, or by the lacteals, these bacilli may be conveyed to the bronchial glands, and so set up pulmonary tuberculosis.

"If there is any substance in this supposition, it is obvious that, by directing our energies to the prevention of bovine infection through milk, we will not only eradicate *all* forms of surgical tuberculosis, but may also be assisting in the prevention of the more serious and fatal form of the disease popularly called 'consumption.'"

W. B.

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[**The Reaction between Drugs and Cells.** Clark, A. J. *Pharm. Jour.* No. 3566, Vol. 128. Pp. 185-9.]

The development of knowledge regarding chemo-therapeutic agents, endocrine secretions and vitamins and the accompanying tendency

to push the dosage of active drugs up to the limit of tolerance, have necessitated the evolution of biological methods for drug standardisation. Study of the fundamental laws governing the reactions between the drugs and the cells is, however, rendered difficult by the fact that the simplest of living organisms represents a structure far more complex than any that are considered suitable for investigation by the physical chemist; moreover, the drugs of chief interest act in extremely high dilutions, and consequently the amounts of the drugs fixed by the cells are far too small to be determined by chemical methods. For these and other reasons —chief of which is the fact that variation is a universal property of living matter—the pharmacologist cannot hope to imitate the physical chemist and obtain formal proof of the processes he postulates.

The study of the actions produced by drugs when time is allowed for equilibrium between the reacting substances to be established, is on the whole more satisfactory than investigation of the kinetics of drug activity. The hormones adrenalin and acetylcholine are particularly favourable for such study, because these drugs induce rapid mechanical responses in various forms of muscle, which responses can be removed rapidly by washing out the drug, enabling a series of experiments to be made on a single isolated organ.

A study of a wide variety of data relating to dosage or concentration of these drugs with the effects produced suggests that the reaction follows the formula:—

$$Kx = \frac{y}{A-y}$$

where x is the concentration of drug, K is constant, A is the maximum effect that can be produced, and y is the observed effect.

This relation between concentration and action shows several peculiarities. In cases where all ranges from 0 to 100 per cent. can be studied, there is a linear relation between dosage and action from 0 to 100 per cent. action. Between 20 and 80 per cent. action there is a nearly linear relation, whilst enormous increases in the dosage are needed to increase the action above 80 per cent.

This appears to be a relation particularly suitable for hormones. At low or physiological concentrations small differences of dosage make considerable differences in the action produced, but when the dosage rises above a certain level, the fact that action varies as the logarithm of the dose decreases the chance of the occurrence of toxic effects.

While it is possible (as in the case of the relation between the concentration and action of the narcotics and anæsthetics, which is peculiarly simple, being nearly linear) to find fairly reasonable physico-chemical explanations for many of the quantitative relations observed between the dosage of drugs and the effects they produce, there are difficult cases where it is uncertain whether the relation obtained expresses the progress of some clinical reaction between the drug and some cell constituent, or whether it is an expression of the individual relation of the cells.

In a large number of cases there is an approximately linear relation between the logarithm of drug dosage and the effect produced, but it would appear that the general tendency has been to under-estimate the difficulties of discovering the nature of the fundamental chemical processes involved in the reactions between drugs and cells. However, satisfactory explanations, based on simple physico-chemical lines, can be given of the manner in which drugs produce actions in extraordinarily high dilutions. The only important qualification to this statement is that in the case of some drugs, such as toxins and antitoxins, the specificity of the processes is much more exquisitely exact than any that are known to occur in inorganic chemistry.

W. B.

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[Urticarial and Papular Occupational Dermatoses of Veterinary Surgeons contracted after Vaginal Manipulations on Cattle. Riedmüller and Stihl, Drs. *Schweiz. Archiv f. Tierhlk.* 1931. Vol. 73, No. 12.]

The authors review briefly the existing literature on this subject and discuss in detail their own experience, together with that of Huddleson and Johnson (1930) and Haxthausen and Thomsen (1931). Huddleson and Johnson describe two forms of dermatitis, an erythema of the forearm, which develops and passes off rapidly within four to eight hours, and a papular condition, which lasts for three or four days. Haxthausen and Thomsen describe five cases of dermatitis ascribed to *B. abortus* (Bang) infection. These took the form of very small papules on the arm and shoulder. They later became pustules and healed after many days under scabs. No general bodily reaction was reported in these cases. The single case observed by the authors of this article was characterised by a " papulous efflorescence " on the arm together with eczema plaques on the forearm and back of the hand. This occurred repeatedly during obstetrical practice, the manifestations lasting for one or two hours. An urticarial condition sometimes occurred.

With regard to the etiology of all these cases, Huddleson and Johnson diagnosed the condition described by them as an "erythema brucellum," because they were able to cause a local reaction in their cases by injecting intradermally a broth culture filtrate of *B. abortus*. They regarded

this as a specific reaction indicating a previous infection. Haxthausen and Thomsen regarded their cases as an allergic reaction: they were able to cause a local reaction in their patients by rubbing "Abortin" (an extract of *B. abortus* prepared similarly to tuberculin) on the intact skin. The authors performed a similar test on their patient. They used a suspension of *B. abortus* (killed) obtained from a dextrose-glycerine-liver-agar culture, and obtained a papular reaction. Similar tests with sterile allantoic fluid from a cow free from *B. abortus* infection also caused a reaction. The authors therefore ascribe the condition to a hypersensitiveness to substance of bovine origin and not to *B. abortus*. The use of ox broth by Huddleson and Johnson may have introduced an error in the same way. The authors' patient gave a weakly positive agglutination reaction with *B. abortus*. Haxthausen and Thomsen had the same experience in their cases.

With regard to the frequency of these dermatoses in veterinary surgeons, Haxthausen and Thomsen reported that 105 out 325 Danish practitioners had been affected at some time or other, whilst, of 166 Swiss practitioners asked, 86 gave positive replies and the remainder replied negatively. The authors believe that the majority of these dermatoses are associated with *B. abortus* infection of the treated cattle, but exact information is as yet lacking. Practical prophylaxis by the use of particular disinfectants during obstetrical work is not yet a simple matter as judged from practitioners' reports. It is thought that the thorough application of ordinary fat to the arm will do as much good as anything.

In a footnote the editor of this periodical, Dr. Gräub, reports favourably on the use of antivirus therapy in the treatment of this condition. This applies particularly to cases caused by pathogenic cocci, which he considers as relatively quite common.

J. T. E.

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[The Syndrome of Acute Hypocalcæmia in Bovine Pathology: Treatment by Intravenous Injection of Gluconate of Calcium. Dehecq, Veterinary Dr. *Recueil de Médecine Vétérinaire.* Volume 108, No. 2.]

The author disclaims any intention of adding to the number of the diverse explanations given of this syndrome, his object being the modest one of grouping conclusions made while employing a new method of treating the affection. The expression "milk fever" should only be applied to the condition arising a day or two after calving and definitely characterised by coma (and mostly cured by mammary insufflation); making part of a wider nosological ensemble "the syndrome acute hypocalcæmia." Within the limits of the latter should be included pseudo-milk fever, vertigo of grass in April, convulsive paraplegia, which appear sometime after cows go to pasture, in animals calved about three to six weeks and the predominant symptom of which is tetany, and in the treatment of which mammary insufflation gives little or no results. With this distinction we may be said to be presented with different aspects of the same affection, the cause residing in the sudden drop in the percentage of blood calcium possibly under endocrine (parathyroid) influences.

One is compelled to this view by the results of the treatment of these various conditions by the parenteral exhibition of a properly adapted salt of calcium. The treatment has been used in England since 1929, yet no original description of it has appeared in French veterinary literature and hence little is known of its technique and results except for brief analyses. During last year occasions offered themselves fairly frequently to experiment with the new treatment, and the results obtained are here recorded.

After some few trials the intravenous injection of calcium gluconate was decided on. English authors vary greatly as to the dose, employing from 4 to 40 drams of the salt according to the case, in solution from 5 to 10 per cent. and given subcutaneously or intravenously, or both simultaneously. Apart from mild cases which may cure almost spontaneously and those treated at the beginning of the malady, which need only a dose of four or five drams of gluconate, the author estimates that for a cow of 10 or 12 cwt. the dose given intravenously should be 14 to 16 drams of the salt in 10 per cent. solution. One might fix the minimum dose at ʒii$_{ss}$ for each 2 cwt. live weight of the patient. The maximum dose is far beyond this: in the convulsive form the author has repeatedly given ʒiv$_{ss}$ of the salt, with the best results.

Two of the patients received each ½-lb. of the gluconate at two interventions in 48 hours, the strength of the solution being 15 per cent., and both patients did well. The author prefers to use the salt and gets it in 50, 100 and 150 gramme bottles. One or two of these, with a little absorbent cotton wool and a ʒi$_{ss}$ syringe and needles, form his armoury when going to a case. The farmer has to supply a funnel, jug and saucepan, and when the appropriate quantity of water is boiling the salt is thrown in little by little and boiled for a minute or two; the solution is filtered through the cotton and allowed to cool to blood heat. Not the slightest danger attends the intravenous injection of the solution at 15 per cent.

Twenty-five cases are recorded and of these four were slaughtered, and in each case the liver was found to be infested with fluke. It is not stated whether the four cows were used for food. They had all four been calved several

weeks and all showed similar symptoms. They lay on the side, grinding the teeth, with copious flow of saliva from the mouth, tetany affecting the posterior limbs, or generalised, convulsive movements of the limbs and inability to stand, and to-and-fro movement of the eyeballs. Eight cases attended by similar symptoms in cows calved from seven days to five weeks recovered after treatment with calcium gluconate given intravenously in doses of from ʒiss to ʒiv.

Two cases are recorded of *post-partum* paresis in sows cured by subcutaneous injection of one ampoule Sandoz gluconate solution (ʒiv of the salt). The author affirms that this will be the treatment of choice in the future for milk fever (parturient paralysis) and for convulsive tetany of cows.

Attention is called to the fact that the calcium content of milk (1·7 grm. per litre) is greater than that of blood calcium (1·3 grm. per litre) and if a good milking cow of about 11 cwt. possesses 32 quarts of blood and yields 37 quarts of milk a day, she gives up daily more calcium than the whole mass of her blood contains. Little wonder that this animal, irrationally treated and with its mammary function over-developed, should be predisposed to endocrine disturbance and perturbations in the metabolism of such an important blood element as calcium, with the production of the phenomena that we all know.

Calcium exists in the gluconate in the proportion 9·3-100; if the blood calcium drops half in the crisis of milk fever the cow of 11 cwt. ought to find about $\frac{22{\cdot}10}{2}$ gram = 11·05 gram of calcium. It is necessary, then, in milk fever cases to introduce into the blood more than ʒiij of gluconate to re-establish equilibrium.

The author concludes by saying that the calcium gluconate treatment gives more cures of milk fever than insufflation and that it succeeds in cases where insufflation has failed; also, the risk of mammary infection and mammitis, is avoided.

W. R. D.

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[Parturient Eclampsia of the Cow. Bolnat, Veterinary Dr. *Recueil de Médecine Vétérinaire.* Vol. 108, No. 1.]

The author states that for several years he has met with a malady analogous to milk fever in some of its manifestations and yet totally different; it is parturient eclampsia. One should insist on this duality, he asserts. As to its definition, it is milk fever with convulsions. Invasion is the same; usually it occurs two to four days after parturition. The first symptom is weakness of the hind limbs; the patient goes down, lies on its side, and there develops the whole syndrome of convulsions, grinding of the teeth, salivation, to-and-fro movement of the eyeballs, sweating, etc., the patient dying in some hours. One subject was observed to last two days. A glance of the experienced eye suffices to differentiate eclampsia from milk fever.

As to treatment, Bolnat admits that, up to now, his attempts in that direction have ended in failure. Udder inflation and caffein subcutaneously, so successful in milk fever, were found useless.

A description is given of the seven cases: in three of these no indication is offered as to how long it was after calving before the symptoms appeared; in one case it was two days and in three, 12 hours.

The cows were treated very much alike—udder inflation, caffein subcutaneously, cold compress to the head, bleeding (in two cases), mustard to the sides, chloral per rectum and intravenously. In most cases death followed in a few hours after treatment had commenced (34 hours, however, in one).

Case 7 is peculiar and instructive. The subject was a middle-aged cow, calved and cleaned the previous evening. The convulsive phase had begun and the author gave a fatal prognosis. However, to suppress the convulsions he gave intravenously over ʒiss of chloral and the cow slept tranquilly until next day. At the same time as the chloral was given an ampoule of calcium gluconate (ʒiv of the salt) was injected subcutaneously. "Obviously," says the author, "the dose is very small, but the very high price of this salt hinders its employment in experimentation." On awakening, the animal no longer had nervous trouble but was still ill. In spite of further treatment the paralysis persisted and the cow was sent to the knacker on the 14th day, very thin and with bed sores on the body prominences. The doctor having failed in combating the paralysis with tonics and strychnine, intends to administer large doses of gluconate of calcium to these cases in future—probably a wise decision.

W. R. D.

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[Penis and Preputial Diseases in Bulls. Götze. *D.T.W.* No. 44. October 31st, 1931. 677.]

The author stresses the importance of making a thorough clinical examination of the genital organs of bulls for breeding. In the clinic for cattle diseases in Hanover a routine examination is made which is of a general and special nature. The general health of the bull is noted as well as the condition of the organs of respiration, circulation and urination, and the animal is tested as regards his willingness and ability to copulate. A special examination is then commenced by rectal palpation by means of which abnormalities at the base of the penis or urethra can be detected. The testicles and scrotum are then examined as well as the

neighbouring lymphatic glands, and attention is then paid to the prepuce and penis. Should any doubt exist as to the condition here the examination should be conducted under sacral anæsthesia which produces an excellent view of these organs. For this purpose the author uses 50-80 c.cm. of a 1 per cent. warm solution of tutocain and anæsthesia results in a few minutes. A microscopical and bacteriological examination of the spermatozoa is then undertaken, and finally the blood is tested for *Br. abortus* agglutinins.

The conditions encountered include imperfect development of the genital organs, crooked penis due to stenosis of the preputial opening, erection hæmorrhages from the glans, papillomata on the penis and glans penis. A catarrhal condition of the prepuce may occur in breeding bulls and give rise to slight systemic disturbance. This is sometimes difficult to diagnose but yields readily to treatment with preparations of silver. Cicatrisation of the preputial opening resulting in infertility has been observed in six bulls of various ages.

W. L. S.

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[The Pathological Anatomy and Etiology of Multiple Degeneration of the Myocardium in Pigs. Pallaske. *Tierärztl. Rdsch.* xxxvii, 781-784.]

All students of pathological anatomy are aware of the occurrence of fatal cases among pigs due to multiple degeneration of the myocardium, the lesions being very similar, macro- and microscopically, to those observed in cases of foot-and-mouth disease, but in which the latter disease should be excluded on epizoötiological and clinical grounds. The author has studied numerous specimens of porcine hearts since 1928, and he describes in detail their appearance and histology.

Comparing the history and clinical evidence of his own cases with those described by Ziegler and by Karsten (1931), he inclines to the view that the unnatural conditions of life under which pigs are reared in a modern intensive pig farm, are mainly responsible for the occurrence of fatal cases, which sometimes assume the form of enzoötic outbreaks, inflicting enormous losses upon pig-breeders. Lack of exercise, narrow, badly ventilated sties, overcrowding, intensive feeding resulting in the overloading of the stomach—these are the factors which, operating over a long period, contribute to the onset and development of heart weakness and of degeneration of the myocardium, for the disease is unknown among sucking pigs or porkers, and is chiefly confined to pedigree stock, breeding sows and to the animals that are being fattened. The strain and shock of a railway journey, rough handling during the loading and unloading, tax the powers of a weakened heart to an extraordinary extent, and may result in sudden death.

H. F.

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[Urinary Calculi in Furred Animals. Sustmann. *D.T.W.* No. 42. October 17th, 1931. 655.]

The author refers to the importance and value of small furred animals and states that veterinarians may now be called to examine and treat animals such as minks, opossums, polecats, foxes, skunks, beavers and raccoons. In captivity these animals are more subject to diseases and in many cases their owners are insufficiently experienced, being attracted to the industry on the chance of making large and quick profits. Urinary concrements are of frequent occurrence in furred animals, due undoubtedly to improper feeding and management. The symptoms are great restlessness, painful urination and loss of appetite. Later there is failure to pass urine, which may escape in drops sometimes mixed with blood. Paralysis of the hindquarters may occur and death usually follows rupture of the bladder and uræmia. The *post-mortem* picture is variable. In cases where the bladder is not burst the walls are dark red and hæmorrhagic. The calculi are seldom found free in the bladder, being more often located in the neck of the bladder. Treatment consists of catheterisation and administration of urinary antiseptics. Surgical interference is not advised.

W. L. S.

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[The Parasitic Diseases of Young Furred Animals and their Control. Sprehn. *D.T.W.* No. 49. December 5th, 1931. 756.]

In four years the author has conducted 675 *post-mortem* examinations on foxes, 558 in minks, 90 in nutria and on 30 raccoons, and his results show the predominant rôle played by parasitic diseases in these animals and the necessity for their control. When quite young, fox whelps may be infected with threadworms (*Toxacara canis*), hookworms (*Uncinaria stenocephala*), and lungworms (*Crenosoma vulpis* and *Eucloeus ærophilus*) all of which set up systemic disturbances and predispose to other diseases. Threadworms, lungworms and coccidia are picked up in the breeding boxes, which must be thoroughly disinfected. Ordinary disinfectants are insufficient for this purpose, but "Viscojod" is recommended. Hookworms are contracted from grasses, etc., around hedgeroots in the enclosures, which are particularly dangerous when covered with dew.

Minks are sometimes infected with a trematode which gains entry through the ingestion of infected frogs. They are also liable to infection with coccidia and lungworms. In raccoons the most important disease is caused

by threadworms and distemper is common. The chief diseases in nutria are likewise parasitic.

In the control of these diseases particular attention is directed to prevention and proved medicaments are used to expel the worms. These are administered *per os* in capsule form and forceps may be utilised. Before mating the adult animals are treated for internal parasites and the breeding boxes are carefully cleansed and disinfected to obviate the danger of reinfection. In controlling hookworms attention is paid to egg examinations of the fæces, anthelmintic treatment and removal of excrement from hedge bottoms.

W. L. S.

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[**Breeding Diseases in Furred Animals.** Richter. *D.T.W.* No. 49. December 5th, 1931. 756.]

The author recalls that the first furred-animal farm was started in Germany ten years ago and now there are over 800 fur farms, which provide a new sphere of interest for veterinarians. A report on fecundity and breeding diseases showed that fertility in silver foxes amounted to only 75 per cent. Abortion has been noted and is thought to be due to psychic causes, although it is possible that infection may result from the feeding of offal from *Br. abortus*-infected carcasses. An improvement in production is likely to result from better housing, feeding and breeding conditions, as the sterility was mainly due to under-development, under-nutrition and cryptorchidism, all of which can be avoided. Out of 2,000 fox whelps, 23 per cent. died before the age of nine months. Most of the deaths occurred during the first few days of life, the chief causes being devouring of young and deficiency of milk. Later on worm attacks and susceptibility to cold are responsible for considerable mortality.

W. L. S.

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[**The Progress of Fur Farming.** Vogel. *Tierärztl. Rdsch.*, xxxvii, 885-886.]

The author reviews the German fur farming industry and gives statistics of valuable fur-bearing animals. According to the census taken on February 1st, 1931, there were 8,593 silver foxes, 7,019 minks, 1,926 nutrias, 1,508 caracul sheep, 306 blue foxes, 90 skunks, 70 beavers, 126 stone-martins, and smaller numbers of others. Although the prices of finished furs are at a very low level at present, there is still a comfortable margin of profit for the farmer. The industry is in its infancy, and offers a promising field of work both for the breeder and the veterinarian.

H. F.

Reports

ANTHRAX IN LANARK: 1911-1931

We have received a copy of this note* prepared, presumably chiefly for members of his committee and the local public, by Mr. Hugh Begg, County Veterinary Officer for Lanark. The note comprises no less than 15 foolscap pages of printed matter, including a map setting out the parishes affected during the period and a graph giving the number of outbreaks year by year.

Mr. Begg reminds us that on two previous occasions, *viz.*, in 1914 and 1918, similar printed statements have appeared and then goes on to review the procedure as practised both before and during the Anthrax Order of 1910. He compares the methods with those prescribed by the present Anthrax Order of 1928, giving the chief points of difference and the amendments incorporated in the new Order. Under Article 4 of this Order it is the duty of the Local Authority to serve a Form A on the occupier of any premises where there is a suspected animal or carcass. It was thought that this would involve too much work for the police and representations were made to the Ministry with the result that "the County Veterinary Staff were authorised to carry on as they had been doing despite the terms of Article 4 of the Order."

It is gratifying to note that no case of human infection has occurred in Lanarkshire within the period dealt with, though several instances have occurred where there has been gross pollution of persons and their clothing with anthrax blood.

A detailed description of how diagnosis is carried out and how carcasses are dealt with is given, which shows that the Lanarkshire Staff carry out the duties imposed on them by the Ministry in a business-like manner. A special point is that each infected carcass in Lanarkshire is removed to a knackery in a specially constructed galvanised iron box and there placed in a digester capable of receiving it without mutilation. It is then submitted to super-heated steam under a pressure of 50-lbs. to the square inch for six hours. This method is said to be unique in Great Britain and Mr. Begg thinks that the manner in which other authorities burn or bury their carcasses is much more likely to spread disease. He goes on to say: "We consider that much of the success achieved in Lanarkshire in limiting the infection in 95 per cent. of the outbreaks dealt with to the original case is due to expeditious diagnosis, the speedy removal of the carcass and infected clothing, etc., by experts, and the efficient manner in which the disinfec-

*County of Lanark, Local Authority on the Diseases of Animals Acts. Notes by the County Veterinary Inspector on outbreaks of Anthrax which have occurred in the County during the twenty-one years from January 1st, 1911, to December 31st, 1931, inclusive.

tion is carried out by the police officials, who act as Inspectors under the Order."

We note that in the period under review 464 animals died from anthrax in Lanarkshire in the 438 outbreaks involved. This shows approximately 1·06 deaths per outbreak, which is, however, but slightly less than the corresponding number of 1·14 for the whole of the United Kingdom in the year 1930.

A general discussion on the cause and prevention of anthrax follows and the opinion is expressed that the male bovine has a higher resistance against the disease than the female. It is pointed out that as most bulls kept are under three years of age and subject to teething sores liable to inoculation " the seeming greater defence may be due to the fact that the local lesion is in the region of the mouth and throat, where presumably the tissues offer greater opposition than the lower alimentary tract to the development and breaking down of the local lesion which precedes systemic invasion by the bacilli." It would appear, however, that this theory requires further proof.

Mr. Begg refers to a case which we think was previously published, where bacilli were demonstrated in the blood of the live animal—a bull —7½ hours before death occurred.

In 21 years 5,763 carcasses were examined in Lanarkshire, which give an average of about 274 per annum. This large number is attributed to the compelling power of the Diseases of Animals (Lanarkshire) Order of 1907, which makes it compulsory for stock-owners to report all unexplained deaths in bovines. Interesting tables are given showing the quarterly incidence of the disease and that of the grazing and non-grazing seasons throughout the period. No case of anthrax in the sheep has been met with. Statistics are included giving the suspected cause of the outbreaks in relation to the individual or combined artificial footstuffs used.

It is noteworthy that only 148 outbreaks occurred in the grazing periods as compared with 290 in the non-grazing periods.

Out of 464 outbreaks, 125 occurred when the animal was fed with only one kind of artificial food. Bone meal, either alone or in combination with other foods, seems responsible for more outbreaks than any other.

A table is given showing the age of the animals affected, which we quote:—

The 464 animals which died of anthrax in the 438 outbreaks embraced

68 calves and heifers up to two years of age;
78 cows up to four years of age;
231 cows four years old and over;
55 bulls;
31 bullocks
1 Clydesdale mare.

Total 464

The whole note makes interesting reading and shows the care with which the data have been collected.

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COLONIAL VETERINARY SERVICE

Nyasaland

The Annual Report of the Veterinary Department for 1930 is issued as a " roneo-d " publication.

Staff.—Lieut.-Colonel Turnbull, D.S.O., is Chief Veterinary Officer, with Mr. J. de Meza, M.R.C.V.S., as Veterinary Bacteriologist, and two Veterinary Officers. There are 34 African Veterinary Assistants and eight Veterinary Police.

Census.	Cattle.	Sheep.	Goats.	Pigs.
	171,000	95,000	211,000	67,000

Disease.—The danger of rinderpest spreading from Tanganyika is lessened.

Trypanosomiasis continues to occur in several localities, and the presence of tsetse fly is a constant menace there. It appears that the area of " fly " is extending.

African Coast Fever.—Under the Colonial Development Loan a considerable number of dipping tanks are being constructed in affected areas, where this operation is considered desirable. One endemic area is being left without dips. Cattle dippings to the number of 881,000 took place in Government tanks.

Rabies.—Four cases occurred during the year and the death of several donkeys from this cause is suspected.

Public Health.—Attention is drawn to the loss of Departmental information which results from meat inspection now being carried out by the Medical Department.

Economics.—It is considered that more cattle are being slaughtered for meat in the native areas.

Dried meat was imported to the amount of 14,400 pounds and disposed of to natives in the Zomba District. It is believed that the consumption of dried fish is on the increase.

Ghee production was carried out, but there remains some difficulty in disposing of the commodity to the Indian community.

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Kenya

The Annual Report of the Chief Veterinary Officer and the Chief Veterinary Research Officer for 1930 is included in that of the Department of Agriculture. Government Printer, Nairobi, 1931. Price 5s. Pages 58 to 189.

For reasons of economy both sections of this Report have been considerably curtailed.

Staff.—Mr. H. H. Brassey Edwards is the Chief Veterinary Officer and Mr. J. Walker the Chief Veterinary Research Officer.

Census.

Cattle.	*Goats.*	*Donkeys.*	*Camels.*
4,742,000	4,321,000	215,000	178,000

The above figures are for the Native areas only: those for the settled areas are not given.

Disease.—*Rinderpest* continues to occupy most of the time of the Department. The number of outbreaks in the settled areas has been reduced, but, with one exception, the native reserves remain infected and little action can be taken there owing to staff shortage.

Double inoculations numbering 137,459 were carried out successfully. Serum and inactivated spleen vaccine have also been employed, especially among young stock and dairy herds: the immunity thus provided, however, is considered to be of only 12 months' duration.

Pleuro-pneumonia appears to be well in hand. Vaccine is issued free of charge.

East Coast Fever.—The number of outbreaks was 33 in the settled areas; in several native reserves the disease is enzootic.

Foot-and-Mouth Disease.—This, which is ordinarily a mild disease in Kenya, assumed unusually serious aspects in one area. It is recorded that in one outbreak animals which had recovered three years before did not again become affected.

Hæmorrhagic Septicæmia.—A disease similar to this is noted for the first time.

Rift Valley Fever is the name given to a disease of sheep which caused a mortality of 30 per cent. of the lambs born in the affected area. This is referred to more fully under *Research.*

Attention is drawn to the greater need of controlling the migration of squatter stock from the Reserves through, and on, farms, and to the greater interest now being paid to stock by the farming community. Financial considerations have prevented the introduction of compulsory dipping and fencing. Over-stocking continues in native areas.

Research.—*Diagnostic routine.* Six thousand six hundred and eighty-three specimens were reported on.

Serum and Vaccine Preparation.—The following were the principal productions:—

Rinderpest serum	462,000	doses
Rinderpest vaccine ...	35,000	,,
Blue Tongue vaccine ...	79,000	,,
Pleuro-pneumonia vaccine	120,000	,,
Anthrax vaccine	11,500	,,

A new method of blackquarter vaccine preparation was introduced during the year in place of the pure culture method.

Drs. Cowdry and Ham investigated the life history of *Theileria parva* in the tick. Numerous experiments to produce an artificial immunity against East Coast fever are recorded, but were unsuccessful. The disease was, however, reproduced by inoculation with emulsions of infected ticks.

"Rift Valley Fever" caused the death of over 3,000 newly-born lambs and some adult sheep; it affects also cattle, and in man produces a fever similar to dengue. The cause is a filtrable virus and transmission by a mosquito is suggested.

Nairobi sheep disease, also due to a virus, has been further investigated. Transmission through ticks has been confirmed.

It is shown that, while vaccination with fowl-pox virus can be effected in young chicks of one to eight days old, the immunity does not usually extend beyond two months.

Nutrition.—Experiments on calf feeding are recorded which indicate that the addition of bone meal is not essential to a diet of grain supplement. The numbers are small.

Animal Husbandry.—A notable expansion has taken place in the provision of native veterinary centres where animal management, feeding and milking can be demonstrated and the pupils taught, in addition, the rudiments of disease control, ghee and hide preparation. The butter fat contents recorded range from 4·83 per cent. to 6 per cent. A simple but effective dairy installation suitable for a native producer has been tried out.

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Civil Veterinary Department, United Provinces, India*

Staff.—The report is submitted to the Government of the United Provinces by Captain Hickey, the Director, who was in charge throughout the year. It is stated that Major Priston, who had been active as Director of Veterinary Services, Central Provinces, is about to retire from the service.

The staff, in addition to the Director, consisted of two Superintendents, three Deputy Superintendents and 212 members of the subordinate staff, an increase of four in the last class over the preceding year. Future recruitment to a limited extent is being provided for by sending State scholars to the United Kingdom and stipendiary students to the veterinary colleges at Calcutta and Patna.

Disease.—Cattle disease was, on the whole, less prevalent than in the previous year, but there was an increase in the number of deaths from black-quarter. A few cases of glanders were detected in the Mounted Police Forces at Allahabad and Gorakpur, but no cases of anthrax in horses or of surra were reported.

Preventive inoculation was carried out against rinderpest, hæmorrhagic septicæmia, black-quarter and anthrax with satisfactory results. The serum simultaneous method against rinderpest has not yet been adopted in the villages. Mention is made of the treatment of rinderpest by the injection of iodine and the method is said to be proving useful. It would be interesting to have more detailed information in regard to this assertion.

*Annual Report of the Civil Veterinary Department, United Provinces, India, for 1930-31. Printed by the Superintendent, Printing and Stationery, United Provinces, Allahabad, India. Price 12 annas.

There was a net increase of one in the number of veterinary hospitals and dispensaries, and the number of cases treated rose from 255,725 to 277,512. Some of the hospitals appear to have a precarious existence through vagaries of financial management on the part of local bodies.

A feature of the report is the large increase in the number of castrations, which rose from 3,247 to 16,530.

Research.—The headquarters and circle laboratories conducted a considerable amount of diagnostic and experimental work, and at the former institution anti-rabic vaccination is reported to have given satisfactory results so far.

It is stated that injections of tartar emetic and Bayer 205 had a beneficial effect in bursattæ. The specificity of carbon tetrachloride in liver fluke disease is favourably commented upon.

Genetics.—There was some reduction in the number of horse and pony stallions at work in the districts and it is reported that there is a slackness of interest in the horse breeding industry.

The stallion depôt at Moradabad appears to fulfil a useful purpose.

General.—Propaganda work received attention, especially at fairs and shows, but it is limited to some extent from lack of funds. A new scheme for the effective reporting of cattle disease could not be brought into force for the same reason.

The Government of the United Provinces, in acknowledging the report, records that it has been read with interest and expresses thanks to the officers for their work during the year.

ROCKEFELLER BENEFACTION FOR DEPARTMENT OF ZOOLOGY AND COMPARATIVE ANATOMY AT UNIVERSITY COLLEGE

At a recent meeting of the Court of the University of London there was accepted on the recommendation of the University College Committee, a gift of £88,000 from the Rockefeller Foundation towards the endowment of the Department of Zoology and Comparative Anatomy at University College. An expression of the most sincere thanks and appreciation of the University and of University College, was conveyed to the Foundation.

The gift was conditional on the University providing £30,000 for land, buildings and equipment of the enlarged department and on the income for maintenance being increased by £905 a year from sources other than the Foundation's grant. The first condition has already been satisfied by a capital grant of £30,000 made by the Court in December, 1930, "towards the cost of better accommodation for the Department of Zoology and Comparative Anatomy," while University College have given an undertaking with regard to the second condition.

The scheme for the development of the Department involves its transfer to the new premises recently purchased by the College in Upper Gower Mews in order that it may be in close proximity to the Departments of Anatomy and Physiology.

MAINTENANCE OF A HEALTHY RABBIT POPULATION*

TOM HARE, M.D., Ch.B., B.V.Sc., M.R.C.V.S.

I am hoping the time is not far distant when the National Rabbit Council will find it possible to publish statistics showing the extent and value of the rabbit industry. The demand for products of the rabbit must be considerable. I have read that £2,000,000 is spent annually upon rabbit wool, pelts and flesh imported from foreign countries into Great Britain. But I am given to understand that our rabbit population and its value have not been ascertained, though it is to be hoped that the rabbit population is or soon will be able to supply the greater part if not all of the public demand, and to supply it with the best quality products from the best quality animals.

A general impression of the magnitude of the rabbit industry and of the quality of the animals can be obtained at the big annual shows. Such exhibitions as the recent Bradford Show demonstrate not only the complexity of the industry but also the enterprise of the British breeders and of those engaged on the commercial exploitation of the products of the rabbit. To rabbit breeders of 25 years ago the Bradford Show must have conveyed feelings of great satisfaction; they will have seen the multiplication of local associations and clubs, the establishment of a weekly press devoted entirely to their interests, and the organisation of large national exhibitions. Out of all these activities they will have seen the emergence of a unity of ideas and purpose which has recently been expressed in the foundation of the National Rabbit Council. Such a national central body, strengthened by the enthusiastic help of local associations, will not only prove of value to the industry by guarding and prosecuting its interests but it will prove a valuable addition to the well-being of the nation.

Probably the rabbit breeder of 25 years ago, if asked to express in two words the force behind all this modern development from a fancy to a great industry, would reply—"*organisation*" and "*research*." Through research new light had been thrown upon the breeding, rearing, feeding, housing, marketing and showing of animals, and the diffusion of these additions to knowledge has required careful and persistent organisation. By means of the weekly press, books, lectures, demonstrations, shows and exhibitions countless defective notions have had to give way to the spread of education about the rabbit.

The success of all these activities towards the material betterment of the

*A lecture before the National Beveren Club on February 23rd, 1932, at the Royal Veterinary College, London.

rabbit industry ultimately depends upon the good health of the stock in our own country. Of all our possessions, that of good health of our animals as of ourselves is the most valuable, and its maintenance demands ceaseless vigilance and study by stockowners. At last, after many years of neglect, both the rabbit industry and the veterinary profession have begun to organise their respective forces in the defence of good health of our rabbit population. There is no good to be derived from finding fault with, or apportioning blame for, past neglect; but immense advantages will accrue from the honestly-held conviction that disease must be fought and health preserved if the British rabbit industry is to consolidate its present and prepare for its future development.

Two very important leads have been given. At its third annual convention, held at Bradford recently, the National Rabbit Council unanimously carried a resolution "that the Central Council takes steps to organise research work in rabbit diseases." The proposer of the resolution, Mr. W. King Wilson, pointed out that until there was some measure of control of rabbit diseases the industry would not progress. It was evident from his remarks that he had appreciated the value of curing and preventing disease in horses, farm animals, dogs, cats and poultry, and that the rabbit industry, like the larger stock-breeding industries, must place research into disease at the head of its programme.

The second important lead was given by the Principal and Governors of the Royal Veterinary College, who, after long consultation with representative breeders, announced their intention to establish a special centre for research into the diseases of furred and feathered animals. For many years individual cats, rabbits and many species of birds had attended in large numbers with the 10,000 patients treated annually in the free clinic of the College Hospital; also individual veterinary surgeons had numbered these animals among their private patients. But it has become increasingly evident that study is required on a far wider and more intensive scale than was possible by the former methods alone. The editors of *Fur and Feather*, *Cage-Birds*, *Pigeons*, and *Racing Pigeon* have collaborated in making known to their readers the endeavour to raise the £11,000 required to establish this laboratory.

Now the purpose of this research laboratory is twofold. Firstly, it will be a centre at which specially trained veterinary research workers will study diseases and how to prevent them. Secondly, being at the mother-college of all the veterinary schools throughout the British Empire, it will be a centre for the instruction of veterinary students in the special problems connected with the control and cure of disease in "fur and feather" such as rabbits, cavies, poultry and other birds. Thus the laboratory will be designed to meet the two most pressing needs of the rabbit industry; firstly, the unravelling of problems of disease and secondly, the handing on of such knowledge to the individual rabbit owner.

How to convey knowledge about disease and its control to individual breeders may appear a big problem to the new National Rabbit Council. Probably many suggestions have been made and considered; possibly the most ideal and theoretically perfect schemes have been found to be far too expensive. Lectures, books and articles in the press serve a useful purpose, but so much of their utility depends upon the ability of the writer to impart and of the reader to interpret the knowledge correctly. Some breeders may think that the solution lies in setting up special institutes and official advisers (a most expensive business). Whatever good work such local institutions may do with regard to the management and marketing of stock, I should be very surprised to learn that they are efficient services for the diagnosis and control of disease. So far as health and disease are concerned the solution of the problem rests essentially upon *correct diagnosis*.

A breeder having animals ill and dying thinks he will get effective help by sending one of his ailing or dead animals to one of the official centres. Even supposing the centre has a first-class trained veterinary pathologist on its staff who makes the *post-mortem*, the pathologist's efforts are limited to the material sent, to the statements of the owner and by ignorance of the conditions operating on the breeder's property.

The control of disease in a rabbitry requires first a correct interpretation of the signs manifested by the diseased animals (*i.e.*, diagnosis) and secondly, an understanding of all the circumstances of the animals, of their owner and of their management so as to determine the appropriate treatment.

The owner of sick horses, cattle, sheep, pigs, etc., has learned that his best and most certain friend and adviser is the veterinary surgeon in whom he has confidence. It is the veterinary surgeon's job to diagnose and relieve animal suffering. It takes a veterinary student as long as a medical student to learn how to diagnose, and both require still longer training before they are able to diagnose correctly. Yet it is thought by some people and by quacks and patent-medicine vendors that a long, expensive and highly skilled training is not necessary for helping the sick animals. I leave the common sense of my audience to assert itself and find the solution to the problem I have outlined. My experience teaches me that the control of disease in animals requiring correct diagnosis backed by specialist knowledge can only be done by

the efficiently trained veterinary surgeon.

Now we come to the second need for establishing a laboratory at the Royal Veterinary College, where the veterinary student can be instructed in the special problems of disease in furred and feathered animals. Now that the rabbit industry is preparing for its future expansion, the veterinary profession must also prepare itself to understand your special problems and so ensure the maintenance of health in your stock. Once your industry expresses its demand the veterinary practitioner will fit himself to serve it. He has fitted himself to serve sheep, pigs, dogs, cats and poultry where 25 years ago he was only called upon to doctor horses and cattle; he will prepare himself for your service so soon as you make up your minds that you want him. At his back the Royal Veterinary College hopes to have its laboratory to which he can send for special help with his problems and whose advice he can transmit to his clients.

Some of you may ask, why did the authorities of the Royal Veterinary College unite rabbits, cavies, fitch, rats, mice, pigeons, cage-birds, etc., in their scheme? Some fanciers, I know, have the notion that diseased rabbits have nothing in common with diseased cage-birds. The control of anthrax in human beings owes its origin to Pasteur's successful treatment of the disease in sheep. Tuberculosis in man, farm animals and dogs is widely studied by means of the disease in cavies. The treatment of vent disease in rabbits owes its origin to the medical profession's knowledge of syphilis in human beings. It is just as likely that the cure of coccidiosis in rabbits will be worked out in poultry as in any other animal. No, the scientist studying what disease means, how it operates and how to prevent it has for his sole aim the unravelling of the secrets of disease and a clue found in a canary may solve the problem of a disease in a cow. The authorities of the Royal Veterinary College were right in founding their plans on a comprehensive basis, and I appeal to the rabbit industry to help their scheme to maturity.

At this time of economic depression many may think the sum of £11,000 is too large for the industries and fancies to whom the appeal is made. But it is during depressions when the Englishman has his back to the wall that he shows up at his best; he collects his resources and bends his strength to getting out of his difficulties. The National Rabbit Council, in spite of the depression, are preparing for bigger things; like the Irishman, they recognise that the way to get over a difficulty is to go round it. Difficulties may hinder but they never prevent progress. Progress your industry must ensure, and the success of that progress will depend ultimately upon the maintenance of a healthy rabbit population.

N.V.M.A. Divisional Reports

DUMFRIES AND GALLOWAY DIVISION*

MEETINGS AT DUMFRIES AND CARLISLE

A meeting of the above Division was held at the Station Hotel, Dumfries, on November 26th, 1931. The President, Mr. W. T. Hewetson (Brampton), occupied the chair and the following members were present:—Messrs. Allan, Bell, Croudace, G. W. Davidson, Edgar, Ferguson, Lindsay, McAlister, McKenzie, Milligan, Ritchie, Robinson, Sangster, Simpson, Stinson, Waddell, Young and F. A. Davidson (Hon. Secretary).

Captain J. R. Rider (Chairman, Organising Committee, N.V.M.A.) was present as a visitor.

Previous to the Business Meeting at the Hotel, Mr. O. Stinson, of Appleby, gave a demonstration of Epidural Anæsthesia, which he preceded by a few remarks on its usefulness and indications. Mr. F. A. Davidson also gave *post-mortem* demonstrations and exhibited several pathological specimens.

The minutes were taken as read, as published in the *Veterinary Record.*

Motion re Representative to the Scottish Branch Executive Committee.—On the proposal of Mr. Sangster, seconded by Mr. Edgar, it was agreed unanimously that the Honorary Secretary be the representative.

Election of Member.—Mr. Cameron, Carlisle, nominated at the last meeting, was elected a member on the proposal of Mr. F. A. Davidson, seconded by Mr. Ritchie.

Correspondence

1.—From Mr. McKinlay (Stranraer), apologising for absence.

2.—Correspondence with reference to business at the last meeting, and requiring no further action.

3.—From the Secretary of the R.C.V.S. with reference to a proposed memorial to the late Sir Frederick Smith. Mr. Craig Robinson proposed, and Mr. Sangster seconded, that a donation of £2 2s. be made from the funds of the Society, and this was passed unanimously.

4.—From the Secretary of the N.V.M.A. enclosing correspondence with the Secretary of the R.C.V.S. with reference to members using letters, which indicated no academic qualifications, after their names and, on the proposition of Mr. R. Simpson, seconded by Mr. F. A. Davidson, the letter was received.

The Organising Committee of the N.V.M.A. had asked the Secretary to arrange for the publication of an article in local papers. The latter had distributed copies of the article to members in the five counties covered by the Division.

*Received for publication February 24th.

Reply from Scottish Branch regarding "Report of a Sub-Committee of the Division."—This report concerned matters which were considered to affect adversely the position of the general practitioner and had been forwarded to the Secretary of the Branch suggesting that the Branch appoint a Sub-Committee representative of the practitioners in Scotland to investigate the points raised. The report had been considered by the Branch Executive Committee and a reply received from the Secretary of the Branch. The Executive Committee of the Division had considered this reply and made certain recommendations to the members of the Division. These were adopted after considerable discussion and the Secretary was instructed to forward this further report to the Secretary of the Scottish Branch. It was also decided, on the motion of Mr. McAlister, seconded by Mr. Davidson, that the Sub-Committee of the Division have power to take any further action thought necessary.

Resolution from the Midland Counties Division re Johne's disease.—The Executive Committee of the Division recommended that:—"The Committee, after considering the state of our knowledge with regard to this disease, are of opinion that, owing to lack of definition of both diagnosis and symptoms of this disease, it is not practicable to have Johne's disease made notifiable under the Diseases of Animals Acts at present. The Sub-Committee think, however, that educational measures should be adopted to attempt to arrest the spread of the disease."

After discussion, the Committee's recommendation was adopted unanimously, on the proposal of Mr. F. A. Davidson, seconded by Mr. A. Young.

Free Veterinary Treatment of Sick Animals of Poor People.—The President intimated that the N.V.M.A. had very kindly sent Captain J. R. Rider, of Darlington, that day to address them on this matter. On the proposal of the President, seconded by the Secretary, the meeting then went into Committee.

Other Business

(*a*) *Fees for notifications of cases under the Diseases of Animals Acts.*—The Secretary announced that at a previous meeting of the Division it was agreed to pay Mr. Milligan's legal expenses in connection with his action against the County Council of Dumfries for non-payment of fees in respect of reports under the Tuberculosis Order of 1925 and the Animals (Notification of Disease) Order of 1919. It was stated that the County Council had refused to pay for notifications which were not made on the prescribed form issued by the County Council. Mr. Milligan objected to the County Council commanding him to use a form not required under the Diseases of Animals Acts and pointed out that notifications are required to be made with "all practicable speed." Mr. Milligan's action in Court was successful and he has been paid for all notifications made verbally to an inspector under the Diseases of Animals Acts. The Secretary proposed and Mr. Lindsay seconded, that the sum, as stated by Mr. Milligan, be refunded to him from the funds of the Division.

(*b*) *Next meeting.*—The next meeting was fixed to be held at Carlisle on a Thursday during March. The Secretary was asked to make arrangements for a paper on Parasites to be given.

* * * * *

SPECIAL MEETING

A Special Meeting of the Division was held at the Crown and Mitre Hotel, Carlisle. on February 4th, 1932. The President, Mr. W. T. Hewetson (Brampton), occupied the chair. Captain J. R. Rider, Darlington, addressed the meeting, but only the following members attended:—Messrs. McKenzie, Milligan, Simpson, Craig Robinson and F. A. Davidson (Hon. Secretary).

Mr. Hewetson proposed and Mr. Davidson seconded, that the meeting should go into Committee.

Francis A. Davidson, *Hon. Secretary.*

* * * * *

YORKSHIRE DIVISION*

MEETING AT LEEDS

A general meeting of this Division was held at the Hotel Metropole, Leeds, on Friday, January 29th, 1932. The President (Lieut.-Colonel J. A. Dixon, T.D.) occupied the chair and in addition to thirty members Messrs. J. O. Powley, D. D. Canning and G. C. Lancaster were present as visitors and Dr. A. Leslie Sheather attended to give an address on Johne's disease.

The minutes of the previous meeting were approved and the Secretary intimated apologies for absence from Major J. Abson, Messrs. D. Hamilton, W. Ackroyd and P. D. Dunn.

Resignations.—Letters tendering their resignation from the Division were intimated from Messrs. F. J. L. Croudace, F. B. Greer, W. H. Wood and W. Ackroyd. In the case of the three first named it was decided that in the circumstances the Division could do no other than reluctantly accept the resignations.

Hon. Associateship.—Referring to the letter from Mr. W. Ackroyd, Mr. J. Clarkson said that he had long been a faithful member of the Division and had occupied the Presidential chair. In recognition of his past services and the esteem with which he was held, Mr. Clarkson proposed that Mr. Ackroyd be elected an Honorary Associate of the Division. This was seconded by Mr. A. McCormick and was carried unanimously.

Joint Meeting.—The President announced that a joint meeting had been arranged with the Yorkshire Branch of the Society of Medical Officers of Health. He said that four years ago the Medical Officers' Society had invited the Division to a joint meeting which was held in

*Received for publication February 16th.

Wakefield and that the Division was to return the invitation for a joint meeting, which was to be held at the Town Hall, Leeds, on Friday, February 26th, at 2.30 p.m., when the main subject before the meeting would be a paper to be given by Dr. F. C. Minett on "Bovine Streptococcus Mastitis and the Public Health."

Election.—Mr. A. B. A. Stone, M.R.C.V.S. (Malton), was elected a member, being proposed by the Secretary and seconded by Captain Brekke.

Nomination.—Mr. E. Ackroyd was nominated for membership by Mr. J. Clarkson.

Presidential Address.—The President now gave his Address from the chair, which was heard with great interest.

[Lieut.-Colonel Dixon's address is reproduced at the commencement of this issue.—Ed. *V.R.*]

The thanks of the meeting to the President for his very able address were expressed by Mr. F. C. Scott and Mr. D. S. Rabagliati.

Treatment of Sick Animals of the Poor.—The Hon. Secretary read a report of the progress made by the Committee formed on November 6th, 1931, to consider schemes for the treatment of sick animals of the poor.

Paper on Johne's Disease.—The President now called upon Dr. Sheather to present his paper on the subject of Johne's disease. This contribution was highly appreciated, and produced a well-sustained discussion. [Dr. Sheather's paper, also, receives separate publication in this number.—Ed. *V.R.*]

A vote of thanks from the meeting was conveyed to Dr. Sheather by the President and in reply, Dr. Sheather appealed for closer coöperation between laboratory and field workers.

The Scheduling of Johne's Disease.—The meeting then proceeded to consider the resolution of the Midland Division on the question of scheduling Johne's disease. The following members took part in the discussion:—Messrs. Pollard, Pratt, Bowes, Holland McCleery, Campbell and Procter. The general opinion expressed was that the disease was on the increase but that at the present time it was not advisable to ask for new legislation.

The President put the following resolution before the meeting and it was carried by a majority of those present:—"The Yorkshire Division of the N.V.M.A., having considered the resolution of the Midland Division *re* the advisability of Johne's disease being made notifiable, while recognising the increasing incidence of the disease and deploring the consequent loss to agriculture, considers that, in the present state of our knowledge of the disease, it would be premature to ask for it to be scheduled."

S. Sharp, *Hon. Secretary.*

The Ministry of Agriculture has issued a supplementary list of approved disinfectants for use under the Diseases of Animals (Disinfectants) Order of 1926.

LIVESTOCK IN INDIA

The Veterinary Services

In its issue of March 5th, *The Times* gave prominence to the following communication from Major-General Sir John Moore, K.C.M.G., C.B., F.R.C.V.S.:—

"*To the Editor of 'The Times'*

"Sir,—In April, 1926, a Royal Commission on Agriculture in India was appointed with wide terms of reference to make careful and complete enquiry into all matters incidental to the agricultural and livestock industries, and to formulate recommendations which would promote the welfare and prosperity of the rural population of that country. The Commission issued its report in April, 1928, and as a result an Imperial Council of Agricultural Research was constituted with three whole-time members, one of whom was a veterinary scientist representing animal husbandry. Owing to financial stringency it is now proposed to abolish the latter appointment, making thereby the recommendations of the Commission inoperative, and reducing the animals of India to that slough of despond and disease in which for many generations they have been engulfed.

"India being essentially an agricultural and pastoral country, the decision arrived at by the Indian authorities is unfair to the individual cultivator, whose wealth and very existence are bound up in his flocks and herds; it is unjust to that small and devoted band of Indian Veterinary Service and Provincial Veterinary Service officers who have to handle the worst situation of animal disease that exists on any part of the world's surface; and it is certainly serious for the welfare of the animals themselves. I may make my point clearer by a recital of a few figures.

"British India has 151,000,000 cattle and buffaloes, 62,500,000 sheep and goats, 3,200,000 horses, mules, and donkeys, and 500,000 camels. Added to this, in the larger Indian States there are 36,000,000 cattle and buffaloes, 25,000,000 sheep and goats, 1,000,000 horses, mules, and donkeys, and 262,000 camels. The incidence of disease and mortaliy is appalling, and occasions great monetary loss and hardship to stock-owners. Rinderpest alone carries off a quarter of a million animals every year. Foot-and-mouth disease, though benign and the death-rate comparatively small, occasions great loss of service in working bullocks and dairy stock. Deaths from hæmorrhagic septicæmia amount to 36,000 per annum; anthrax exacts a heavy toll in all animals; surra in horses and in particular in camels is the cause of great loss of efficiency; glanders in horses, mules, and donkeys persists; cow-pox, sheep-pox, camel-pox, horse-pox, biliary fever in horses, redwater in cattle, and malignant jaundice in dogs are very common; rabies in dogs is very prevalent, to the danger of human beings and animals in general.

"It is a formidable array of contagious disease, and, there being no Diseases of Animals Act as in other countries, control is very imperfect. The qualified veterinary staff to meet emergencies, *viz.*, officers of the Indian Veterinary Service and Provincial Veterinary Service, is under 100, of which less than half have the English qualification of M.R.C.V.S.; the subordinate veterinary staff, *viz.*, veterinary assistant surgeons, who are chiefly concerned in the treatment of ordinary cases of sickness in dispensaries under District Boards, numbers approximately 1,600. The Royal Commission, realising the serious state of affairs, recommended increase to 300 veterinary officers and 6,000 veterinary assistant surgeons for British India, and 100 veterinary

surgeons and 1,750 veterinary assistant surgeons for the Indian States.

"The whole situation is most difficult, and to co-ordinate all work in so vast a country it is essential that there should be an administrative veterinary head to the veterinary services of the country. Disease of animals being the most serious aspect to the success or otherwise of animal husbandry, it is evident that a well-organised system of control, including a Diseases of Animals Act and the adoption of adequate means for research and education, should be the first and main purpose of his appointment. There are also general questions of health, sanitation, nutrition, genetics, and other factors making for improvement and welfare of livestock which come within his sphere of administration. The assistance which his officers and subordinate staff could render on all these points under his direction means a lot to the agricultural and pastoral community and would be of infinite benefit to the Indian Empire as a whole.

"It is very much to be hoped that the Government of India in its wisdom will not prematurely bring to naught the sage counsel and advice of the Royal Commission, and that the necessity for retrenchment will not outweigh the need for good administration to meet a great purpose. The economies resulting from the prevention of animal disease and research into it cannot be measured in words or balance-sheets; these are inherent in the welfare of the rural community and in the animals themselves. There are possibilities in India respecting animals and animal products, particularly milk and meat, which have yet to be explored. To bring these great purposes to a fruitful issue it is most necessary that the administrative head should be a British veterinary scientist. It is not within the power of an inexperienced Indian representative.

"Yours truly,

JOHN MOORE.

16, Frognal Lane, Hampstead, N.W.3."

IN PARLIAMENT

VETERINARY SURGEONS (IRISH FREE STATE AGREEMENT) BILL

In the House of Commons on Friday of last week The Veterinary Surgeons (Irish Free State Agreement) Bill passed through Committee and was read the third time.

The Destructive Imported Animals Bill and the Grey Seals Protection Bill, which have passed through the House of Lords, were read a second time, and the money resolution in connection with the former was agreed to in Committee of the whole House.

On Monday last The Dangerous Drugs Bill (which has passed through the House of Lords) was read a second time, and The Destructive Imported Animals Bill the third.

The Dangerous Drugs Bill debate will be dealt with in our next issue.

. . . . . .

The following questions and answers were recorded in the House of Commons recently:—

MILK (REORGANISATION COMMISSION)

Dr. CLAYTON asked the Minister of Agriculture whether he proposes to appoint a reorganisation commission for milk and milk products?

Sir J. GILMOUR: Yes, Sir.

. . . . . .

PUBLIC HEALTH (IMPORTED MILK)

Mr. KIMBALL asked the Minister of Health whether any action has been taken to discover if fresh milk imported from abroad, which has been pasteurised once before exportation and a second time after importation, has been sold in this country as pasteurised milk?

Sir H. YOUNG: The inquiries made by officers of my Department have afforded no evidence that any such milk has been sold in this country as "pasteurised milk."

. . . . . .

AGRICULTURAL COLLEGES (GRANTS)

Lord SCONE asked the Secretary of State for Scotland the amount of the grants sanctioned to each of the three Scottish agricultural colleges during the financial year ending March 31st, 1932; and whether it is proposed to continue the same grants during the next financial year?

Sir A. SINCLAIR: Grants from State funds have been sanctioned in aid of the maintenance expenses of the Scottish agricultural colleges in the current financial year as follows:—

	£
Edinburgh and East of Scotland College of Agriculture	17,045
West of Scotland Agricultural College ...	25,906
North of Scotland College of Agriculture	25,920

The Department of Agriculture for Scotland are at present in communication with the Scottish Education Department with a view to the continuance of the special assistance which has been given to the colleges in recent years from the Education (Scotland) Fund. It is hoped that it will be found possible to provide for the payment of grants in the coming financial year sufficient to enable the services of the colleges to be maintained on approximately the same standard as in the current year.

. . . . . .

DEER (DAMAGE TO CROPS)

Mr. MACPHERSON asked the Secretary of State for Scotland whether, in view of the agreement reached by all parties concerned, it is now proposed to introduce legislation dealing with damage done by deer to crops in the North of Scotland?

Sir A. SINCLAIR: At a conference held on February 23rd a committee representative of the associations concerned was appointed to consider proposals for dealing with this subject. When the report of this committee, which I hope will show unanimity of opinion, has been submitted to me, I shall consider the question of the introduction of legislation.

H.M. STATIONERY OFFICE PUBLICATIONS

The undermentioned have been published recently. Copies can be purchased through any bookseller, or directly from H.M. Stationery Office, at the following addresses:—London: Adastral House, Kingsway, W.C.2, and 28, Abingdon Street, S.W.1; Cardiff: 1, St. Andrew's Crescent; Manchester: York Street; Edinburgh: 120, George Street.

	Price Net. s.	d.	*Post Free.* s.	d.
NON-PARLIAMENTARY PUBLICATION.				
SCIENTIFIC AND INDUSTRIAL RESEARCH:—				
Grants to Research Workers and Students, Notes on. (Revised, January, 1932.) (47-9999.)	0	2	0	2½
HOUSE OF COMMONS BILLS.				
36. Slaughter of Animals ...	0	2	0	2½
38. Destructive Imported Animals. (H.L.)	0	2	0	2½
39. Dangerous Drugs. (H.L.)	0	2	0	2½

Notes and News

DIARY OF EVENTS

March 21st.—N.V.M.A. Editorial Committee Meeting at 2, Verulam Buildings, Gray's Inn, W.C.1.
March 23rd.—Annual Meeting of the Lancashire Division, N.V.M.A., at Manchester.
March 24th.—Meeting of the Scottish Society of Veterinary Inspectors, at Glasgow.
March 31st.—Meeting of the Dumfries and Galloway Division, N.V.M.A., at Carlisle.
April 1st.—R.C.V.S. Annual Fees due 1932-33.
April 6th.—R.C.V.S. Registration Committee.
April 7th.—R.C.V.S. Examination, Registration and Parliamentary Committees.
April 8th.—R.C.V.S. Library and Finance Committees; Council Meetings.
April 11th.—N.V.M.A. Committee Meetings. Edinburgh.
April 12th.—N.V.M.A. Council Meeting, Edinburgh.
May 5th.—R.C.V.S. Last day for Nominations for election to Council.
May 12th.—D.V.S.M. Examination entries due.
May 19th.—R.C.V.S. Council Election Voting Papers issued.
May 26th.—R.C.V.S. Last day for receipt of Voting Papers.
June 2nd.—R.C.V.S. Annual General Meeting. V.V.B. Fund Annual General Meeting.
June 9th.—D.V.S.M. Written Examination begins.
June 13th.—D.V.S.M. Oral Examination begins.
June 29th.—R.C.V.S. Committee Meetings begin.
June 30th.—R.C.V.S. Annual Dinner.
July 1st.—R.C.V.S. Council Meetings.
July 6th.—R.C.V.S. Summer Examinations begin.
Aug. 8th-13th.—N.V.M.A. Jubilee Congress at Folkestone.

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R.C.V.S. ELECTION TO COUNCIL

A further nomination, in addition to the nine already reported, has now been received, namely, that of Mr. T. M. Mitchell, of Sunderland, whose proposers are Mr. J. R. Rider and Mr. H. Hicks. Will overseas members please note this addition to the number of candidates for which they are entitled to vote?

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PRESS SUPPORT FOR PROFESSIONAL DISPENSARIES

Evidence is forthcoming, in eulogistic Press references, that the effort being made in many centres throughout the country to supply free or nominal-cost professional treatment to the sick animals of poor persons, is receiving wide public recognition and support. The latest instance is a reference in the *Newcastle Journal* to the work of Mr. Harry Elphick in connection with the Newcastle Animal Dispensary, which concludes "hats off to the gentleman who thus voluntarily devotes two evenings of his leisure to the poor of the city. All his wants should be supplied."

. . . . .

In a later issue the same paper, in a note relative to the recent annual meeting of the North of England Division, says: "Tribute was also paid to the value of this work by Lieut.-Colonel P. J. Simpson, National President. Reference was also made to the folly of owners of dogs and cats allowing people other than qualified veterinary surgeons to treat ailing animals."

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PERSONAL

Levée Presentations.—The following were included among the presentations made to His Majesty The King on the occasion of the Levée held at St. James's Palace on Tuesday, March 8th:—

Castle, Lieut.-Colonel Frank, Royal Army Veterinary Corps (T.A.), on promotion, by the Secretary of State for War.

Wortley, Captain Walter, Royal Army Veterinary Corps (T.A.), by the Secretary of State for War.

. . . . .

North of England Division President.—The new President of the North of England Veterinary Medical Association is Mr. H. Hicks, of West Hartlepool. A London man, Mr. Hicks was at Norfolk before taking up practice in the Hartlepools in 1920. Mr. Hicks' presidential address was a much-appreciated contribution to the proceedings of the Association, which will be reported in an early issue of the *Record*.

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THE HORSE FOR SAFETY

During 1930, in Great Britain, 7,305 persons were killed and 177,985 were injured on the roads.

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R.C.V.S. OBITUARY

Death of Major-General H. Thomson, C.B.

It is with regret that we have to announce the death of Major-General H. Thomson, C.B., which took place at Bedford on March 10th, 1932, at the age of 80 years.

The deceased officer graduated in London on April 19th, 1871; was gazetted as Veterinary Surgeon on October 31st, 1871; promoted for distinguished service in Egypt to Veterinary Surgeon 1st Class on February 15th, 1883; granted relative rank of Major on May 21st, 1884; promoted Inspecting Veterinary Surgeon on October 8th, 1890; Lieut.-Colonel on September 26th, 1891; Principal Veterinary Officer on June 1st, 1898; was appointed Director-General, Army Veterinary Department, on October 15th, 1902; retired on retired pay October 15th, 1907.

It was during his tenure as Director-General that the Army Veterinary Corps (now Royal Army Veterinary Corps) was formed.

General Thomson served in India and Egypt, and saw active service in the latter, for which he was awarded the medal with clasp for Tel-el-kebir, and Bronze Star.

General Thomson received the C.B. in May, 1900.

To his widow and family all officers of the Corps tender their deepest sympathy in their sad loss.

Correspondence

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

All correspondence must bear the name and address of the contributor for publication.

The Editor does not hold himself responsible for the opinions of his correspondents.

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QUESTIONED DIAGNOSIS

To the Editor of the Veterinary Record.

Sir,—I was very interested in the article by Major Hamilton Kirk under the title "Feline Rheumatic Arthritis" in the *Veterinary Record* of March 12th.

Without offering an alternative diagnosis, might I suggest, with all deference to Major Kirk, that, from the history, radiographic examination, necropsy and in the absence of any microscopic examination, a more apt title would have been "Feline Rheumatic Arthritis?"

Yours faithfully,

Matthew H. W. Miller.

12, Penare Terrace,
Penzance.
March 12th, 1932.

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"A FEW NOTES ON RECENT LOSSES IN CATTLE"

To the Editor of the Veterinary Record.

Sir,—In a Clinical Communication published under the above heading in your issue of March 5th, Mr. Wooff describes a condition which is one not unknown to many practitioners.

As recently as last spring Mr. W. Lothian, of Duns, described some cases in your columns and showed that the symptoms were in at least one instance associated with a low blood calcium content.

In describing the condition Mr. Wooff says: "If treatment is not applied immediately it will soon die." It is unfortunate that the successful form of treatment is not given as this has a considerable bearing on the rest of the article.

"Examination of the blood has revealed a calcium deficiency." While this is only another symptom, one would like more exact information:—

How many blood-calcium estimations were made?

How low was the percentage of calcium?

Was the blood always obtained before death?

Reasoning from the stated calcium deficiency, Mr. Wooff postulates a low vitamin content in the diet as a result of the wet, sunless summer of 1931. In my experience cases are met irrespective of the character of the preceding summer, and though the incidence has risen in the last few years it is not common for any one farm to suffer equally in all years.

It is, however, with the theory of dehydration that I would join issue with Mr. Wooff. He discusses the possible effects of dehydration but does not tell us that there was any evidence that the animals were receiving an inadequate supply of water; nor does he quote any clinical sign that might be referred to a lack of water—such as, for instance, a small volume of urine of a low specific gravity with correspondingly high solid content.

Can he produce any evidence that the domestic animals suffer from dehydration during the early stages of pregnancy?

It is known that dehydration occurs in the human subject in the early stages of pregnancy, but it is equally well known that the cause is hyperemesis gravidorum.

"If particles are deposited in the brain vessels . . . ." Were any sections of the brain vessels examined? Were emboli found composed of protein particles (sic)?

"In conclusion" Mr. Wooff, in suggesting a preventative deals neither with the postulated avitaminosis nor with dehydration but gives iodised calcium licks . . . . why iodised?

Why give calcium to an animal which already, as far as we have been told, has sufficient but cannot make use of what she has?

The fact that the cows ate calcium, iodine and sugar and then the occurrence of cases ceased, indicates that in this particular outbreak the condition was not due to either dehydration or avitaminosis.

One would welcome the experiences of practitioners in dealing with similar cases.

I am, Sir,

Yours faithfully,

Geo. F. Boddie.

Royal (Dick) Veterinary College,
Edinburgh.
March 7th, 1932.

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ROYAL COUNTIES DIVISION ANNUAL DINNER

To the Editor of the Veterinary Record.

Sir,—The report submitted to you of my speech at the above Dinner, and published in your issue of to-day, contains a number of errors, some of which I ask to be allowed to point out.

No one will believe, I hope, that I crudely said "everyone knew that when the student left College and came to him as assistant, he was practically useless," but there is another equally absurd statement which I must promptly disown. It was, of course, not Th. Violet, but John Barlow who was Dick's first Professor of Anatomy—Professor Violet was Professor of Pathology at Lyons. And I am particularly sorry that my little story of the Staffordshire Potter should have been so garbled. What I said was that when John Astbury saw the Dunstable farrier, whom he consulted about his horse's eyes, make a fine white powder by calcining a piece of flint, which powder he then blew into the horse's eyes, Astbury noticed that the tears running down the horse's cheek formed a white clay, and it was in that way he discovered the ingredient which he needed to perfect the manufacture of his wares.

In the interests of your readers, could it not be arranged that speakers should be allowed to correct the MSS. of their speeches?

Yours faithfully,

Fred Bullock.

2, Hatherley Gardens,
Crouch End, N.8.
March 12th, 1932.

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INVESTIGATION OF SUSPECTED LIGHTNING STROKE

To the Editor of the Veterinary Record.

Sir,—In the notes *re* Lancashire V.M.A. scheme of enquiry in connection with the investigation of suspected cases of lightning-stroke, published under my name in to-day's *Record*, I find that one of my sentences reads badly.

The end of this sentence runs as follows:—"the injury or death could still be quite consistent with lightning-stroke, provided that it has occurred." What was intended, of course, was "provided that lightning has occurred."

Yours faithfully,

S. J. Motton.

Penzance.
March 12th, 1932.